

# **TRAFFIC STUDY**

**For**

**DAI DANG MEDITATION CENTER  
(MUP04-016, LOG NO: 04-02-011)**

**Prepared For: The County of San Diego**

**Submitted To:**

Dai Dang Meditation Center  
6326 Camino Del Rey  
Bonsall, CA 92003

**Prepared By:**

Bill E. Darnell  
(RCE 22338)

Darnell & Associates, Inc.

~~1446 Front Street~~ 2870 Fourth Avenue, Suite ~~300A~~  
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Signature:



Date Signed:

12/5/11

**Revised: December 5, 2011**

Revised: October 19, 2011

Revised: March 12, 2010

Revised: December 16, 2009

Original: November 2, 2009

# Darnell & ASSOCIATES, INC.

TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

December 5, 2011

Khuong Ho  
Dai Dang Meditation Center  
6326 Camino Del Rey  
Bonsall, CA 92003

D&A Ref. No.: 090801

Subject: Traffic Study for the Dai Dang Meditation Center and Monastery Located at 6326 Camino Del Rey in the Bonsall Community of San Diego County.

Dear Mr. Hoang:

Per the direction of the County of San Diego, Darnell & Associates, Inc. (D&A) has revised our March 12, 2010 traffic impact study to assess the potential impacts associated with the Dai Dang Meditation Center and Monastery located at 6326 Camino Del Rey in the Bonsall Community of San Diego County.

This iteration of the traffic study incorporates the addition of the analysis to assess the potential impacts of the project on typical Saturday conditions as well as Sunday conditions. Thus this report analyzes the traffic generated by the proposed project on local roadways and intersections in the area on Saturday and Sunday (the primary days of activity at the facility) under existing plus typical weekend activities.

If you have any questions, please feel free to contact the office.

Sincerely,

DARNELL & ASSOCIATES, INC.



A handwritten signature in black ink that reads "Bill E. Darnell".

Bill E. Darnell, P.E.  
Firm Principal  
RCE 22338

Date Signed: 12-5-2011

BED/vsh

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# TRAFFIC STUDY

FOR

DAI DANG MEDITATION CENTER  
(MUP04-016, LOG NO: *04-02-011*)

IN THE  
COUNTY OF SAN DIEGO

*Submitted To:*

Dai Dang Meditation Center  
6326 Camino Del Rey  
Bonsall, CA. 92003

*Submitted By:*

*Darnell & Associates, Inc.*  
*2870 Fourth Avenue, Suite A*  
*San Diego, CA 92103*  
*619-233-9373*

~~*March 12, 2010*~~ *December 5, 2011*

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## EXECUTIVE SUMMARY

The proposed project is an application for a Major Use Permit to allow for construction of facilities to support a Buddhist meditation center and monastery, the Dai Dang Meditation Center, totaling approximately 22,796 square feet (SF) at 6326 Camino Del Rey in the Bonsall Community of San Diego County. Proposed weekly operations at the Dai Dang Meditation Center consist of Buddhist monk training and studying on the weekday and typical weekend ([Saturday and Sunday](#)) services. Per Darnell & Associates, Inc. (D&A's) August 17, 2006 *Traffic Study for Dai Dang Meditation Center (P04-016)*, the proposed project is estimated to generate 41 average daily trips, 2 AM peak hour trips, and 6 PM peak hour trips during the weekday. The August 17, 2006 Traffic Study prepared by D&A focused on the potential impacts that the Dai Dang Meditation Center project may have on weekday traffic conditions. No significant impacts were identified on any of the key roadway segments or intersections analyzed, including the segments along Camino Del Rey that were also analyzed in this study.

This supplemental traffic study focuses on the potential traffic impacts that the Dai Dang Meditation Center may have on the typical weekend ([Saturday and Sunday](#)) traffic conditions. On the typical weekend ([Saturday and Sunday](#)) service the facility will be open to visitors who come to the facility for worship, meditation, a silent communal lunch, and a question and answer period with the headmaster. The normal weekend ([Saturday and Sunday](#)) meditation activity generally attracts up to 300 people. As this report will show, based on a projected attendance of up to 300 guests, the proposed project will generate 300 average daily trips, 54 AM peak hour trips, 78 mid-day peak hour trips, and 21 PM peak hour trips during the typical ~~Sunday~~[weekend](#) meditation activity. ~~These~~[The](#) typical ~~Sunday~~[weekend](#) services will occur approximately 52 ~~times~~[weekends](#) per year.

On occasion, some of the visitors to the Dai Dang Meditation Center are brought in via a 25 to 50 passenger bus. All buses are privately contracted and must preregister with the Dai Dang Meditation Center prior to arriving to insure that the maximum occupancy of 300 guests does not get exceeded. Although the buses will be able to drive into the project site to drop-off/pick-up the guests, they will not be allowed to park on-site. Therefore all buses will be staged in nearby park-and-ride lots while visitors are at the Dai Dang Mediation Center.

Based on a vehicle occupancy rate of 2.5 people per car there would be a parking demand of 120 parking spaces (300 people/2.5 people per car = 120 cars = 120 parking spaces). This is 2 parking spaces less than the 122 available on site. To insure parking demand will not exceed the available on-site parking the applicant ~~will implement~~[has implemented](#) a parking reservation system using its website.

## SECTION I – INTRODUCTION

### PROJECT DESCRIPTION

The proposed project is an application for a Major Use Permit to allow for construction of facilities to support a Buddhist meditation center and monastery, the Dai Dang Meditation Center, totaling approximately 22,796 square feet (SF) at 6326 Camino Del Rey in the Bonsall Community of San Diego County. Figure 1 is a regional map, Figure 2 shows the project vicinity map, and Figure 3 shows the proposed site plan.

The project will involve the demolition of one existing building to be replaced with a parking lot, the retention of four existing on-site structures, and the construction of a meditation hall, the construction of a residence quarters/library/kitchen, the construction of a main worship hall, and the development of an overflow parking lot. Accommodations will be provided for approximately 30 ~~monks~~on-site residents at any one time. At ultimate build-out, the proposed facilities will consist of three (3) new main buildings, landscaped outdoor areas, 81 on-site parking spaces at the northern end of the project site, and an overflow parking area located at the southeast corner of the property along Camino Del Rey which will be able to accommodate up to 41 parking spaces.

The main access to the project site will be provided by a 24-foot wide paved driveway from Camino Del Rey. Emergency access will be provided from Wrightwood Road at the northerly boundary of the site. This road will provide the North County Fire Protection District with emergency access to the property, and will not be utilized by visitors or guests of the facility.

On the typical weekend (Saturday and Sunday) service the facility will be open to visitors who come to the facility for worship, meditation, a silent communal lunch, and a question and answer period with the headmaster. The normal weekend meditation activity generally attracts up to 300 people. ~~These~~The typical ~~Sunday~~weekend services will occur approximately 52 ~~times~~weekends per year.

### CONGESTION MANAGEMENT PROGRAM

Based on the approval of Proposition 111 in 1990, regulations require the preparation, implementation, and annual updating of a Congestion Management Program (CMP) in each of California's urbanized counties. The original CMP for the San Diego region was adopted in 1991 and has been updated periodically as an element of the Regional Transportation Plan (RTP). One required element of the CMP is a process to evaluate the transportation and traffic impacts of large projects on the regional transportation system. That process is undertaken by local agencies, project applicants, and traffic consultants through a transportation impact report usually conducted as part of the CEQA project review process. Authority for local land use decisions including project approvals and any required mitigation remains the responsibility of local jurisdictions.

~~The~~Prior to the fall of 2009, the criteria for which a project ~~is~~was subject to the regulations as set forth in the CMP ~~are~~were determined by the trip generation potential for the project. ~~Currently, the~~The threshold ~~is~~for the CMP analysis was 2,400 average daily trips (ADT) or 200 peak hour trips. The proposed project is anticipated to generate 300 daily trips, 54 AM peak hour trips, 78 mid-day peak hour trips, and 21 PM peak hour trips (see Section III) on a typical ~~Sunday~~weekend; and is therefore, not subject to CMP guidelines for traffic impact studies.

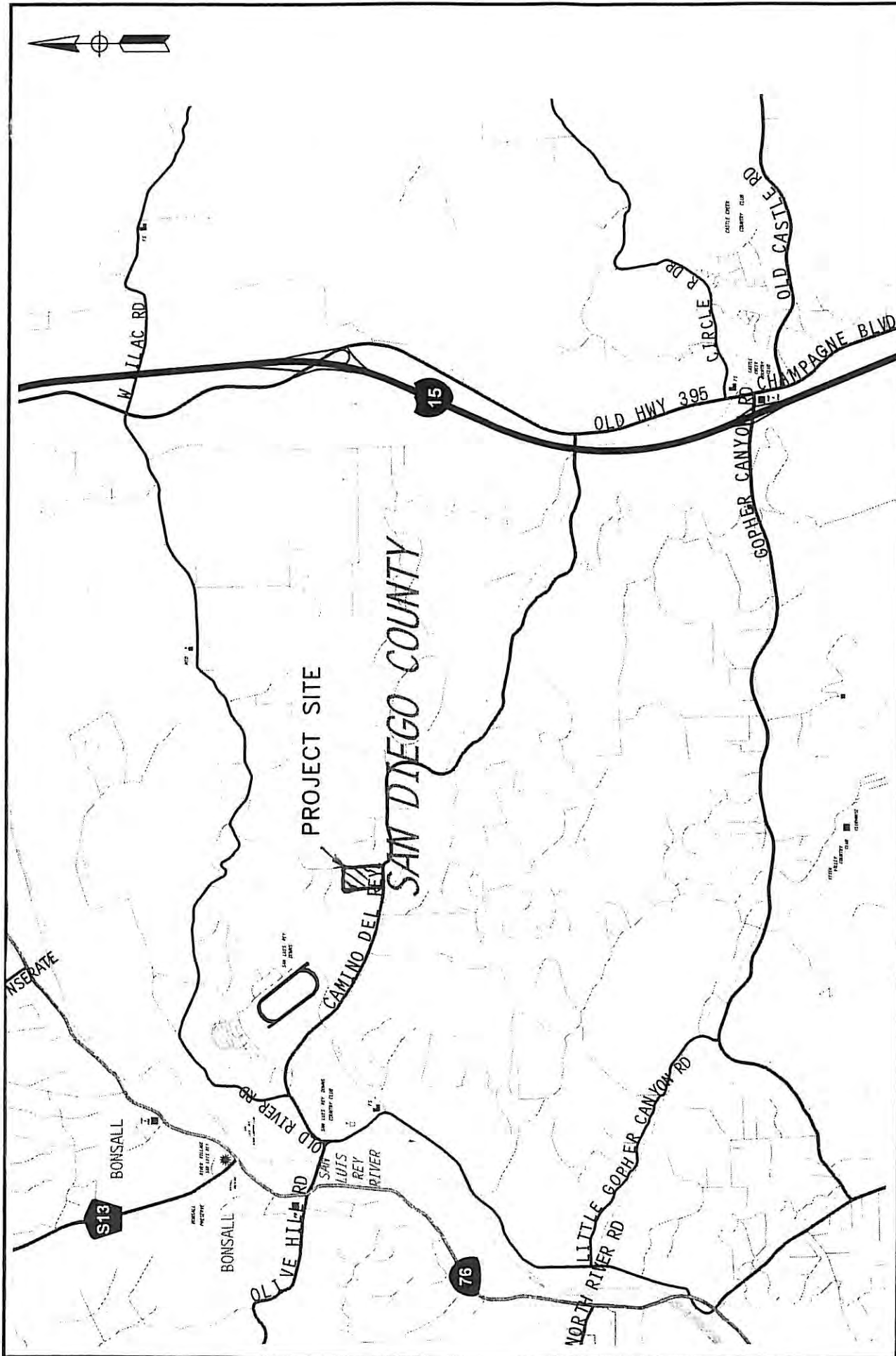


FIGURE 1  
REGIONAL MAP

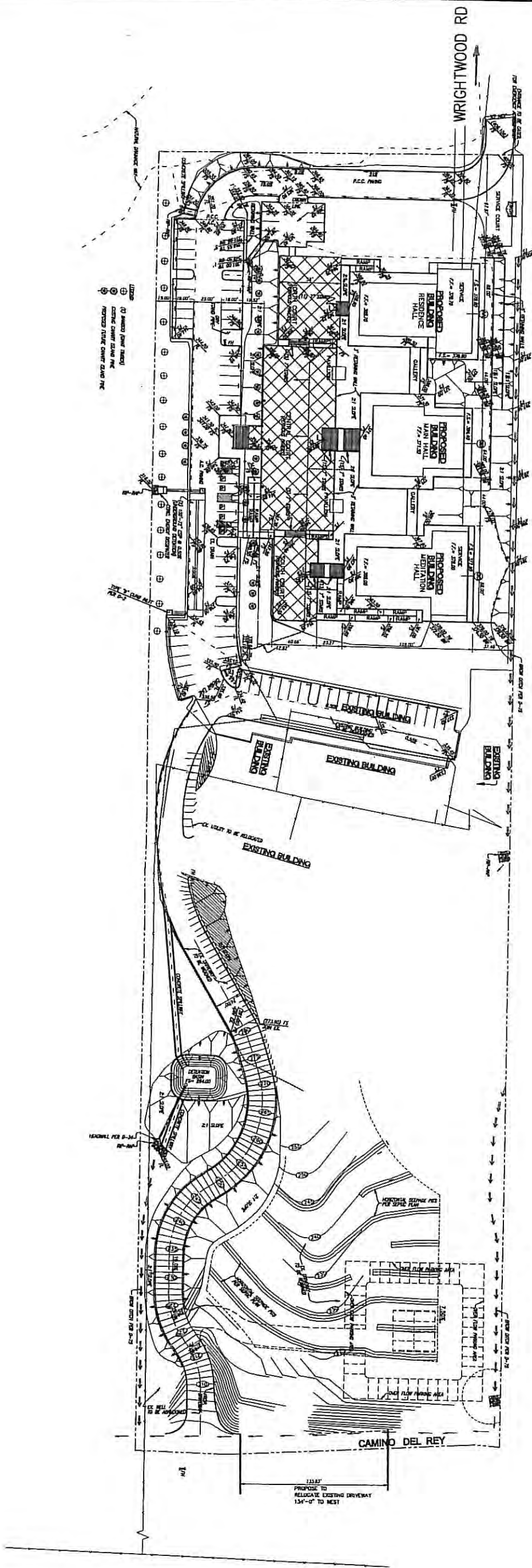
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FIGURE 3  
SITE PLAN

## SCENARIOS STUDIED

The traffic scenarios analyzed in this report are identified as follows:

**Existing Conditions** refers to that condition which exists on the ground today (~~2009~~2011), including existing traffic and existing lane configurations at roadway segments and intersections.

**Existing Plus Typical Saturday Traffic Conditions** refers to those conditions which includes the existing Saturday traffic volumes and lane configurations plus the traffic generated by the up to 300 visitors that attend the Dai Dang Meditation Center and monastery for meditation, a silent communal lunch, and a question and answer period with the headmaster. It should be noted that the typical weekend events occur on 52 weekends out of the year between 9:00 a.m. to 6:00 p.m.

**Existing Plus Typical Sunday Traffic Conditions** refers to those conditions which includes the existing Sunday traffic volumes and lane configurations plus the traffic generated by the up to 300 visitors that attend the Dai Dang Meditation Center and monastery for meditation, a silent communal lunch, and a question and answer period with the headmaster. It should be noted that the typical ~~Sunday~~/weekend events occur on 52 weekends out of the year between 9:00 a.m. to 6:00 p.m.

## LEVEL OF SERVICE

Level of Service (LOS) is a professional industry standard by which the operating conditions of a given roadway segment or intersection are measured. Level of Service is defined on a scale of A to F; where LOS A represents the best operating conditions and LOS F represents the worst operating conditions. LOS A facilities are characterized as having free flowing traffic conditions with no restrictions on maneuvering or operating speeds; traffic volumes are low and travel speeds are high. LOS F facilities are characterized as having forced flow with many stoppages and low operating speeds. Table 1 shows the average daily traffic volumes (ADT) and delay ranges that are equivalent to each level of service.

In general, the region-wide goal for an acceptable Level of Service on all roadway segments and intersections is “D.”

Table 1 - Level of Service Ranges			
LOS	Intersections		Roadway Segments
	Signalized- Delay (Seconds/Vehicle) <sup>1</sup>	Unsignalized Delay (Seconds/Vehicle) <sup>1</sup>	Average Daily Traffic (ADT) <sup>2</sup>
			Light Collector
A	Less than or Equal to 10.0	Less than or Equal to 10.0	Less Than 1,900
B	10.1 to 20.0	10.1 to 15.0	1,901 to 4,100
C	20.1 to 35.0	15.1 to 25.0	4,101 to 7,100
D	35.1 to 55.0	25.1 to 35.0	7,101 to 10,900
E	55.1 to 80.0	35.1 to 50.0	10,901 to 16,200
F	Greater Than 80.0	Greater Than 50.1	Greater Than 16,200
<sup>1</sup> The delay ranges shown are based on the 2000 Highway Capacity Manual (HCM)			
<sup>2</sup> The volume ranges are based on the County of San Diego Circulation Element of a Light Collector, the average daily volume ranges for the other roadway classifications has been provided in Appendix A.			
LOS = Level of Service			

## ANALYSIS METHODOLOGY

The roadway segment daily LOS was determined by comparing the traffic volumes under each traffic scenario to the capacity of the roadway according to its roadway cross-section and classification. For the purpose of this report, the daily traffic volumes of the roadway segments in the vicinity of the project were compared to the County of San Diego Level of Service classification thresholds. The daily (24 hour) traffic count sheets and a summary of the roadway classifications and their normal expected carrying capacity in terms of vehicles per day at different levels of service as identified in the County of San Diego Public Road Standards are included in Appendix A.

Synchro version 6 was utilized to analyze the morning, mid-day, and afternoon peak hour conditions of the intersections in the project vicinity. The signalized intersection methodology defines LOS based on delay using variables such as lane configuration, traffic volumes, and signal timings. The unsignalized intersection methodology defines LOS based on the longest delay experienced by any single movement. Since the Synchro program calculates the average delay per vehicle, there may be instances where the Synchro analysis will show a reduction in delay with the addition of more traffic. This phenomenon occurs when the additional traffic is added to a movement that experiences a shorter amount of delay, thereby decreasing the intersection's average delay per vehicle (i.e. a larger amount of vehicles will have to wait a shorter time while only a few vehicles have to wait an extended period of time). It should be noted that the Synchro program is based on the 2000 Highway Capacity Manual (HCM).

## **REPORT ORGANIZATION**

Following this section, Section II evaluates the existing roadway characteristics and traffic conditions surrounding the project area. Section III examines the project trip generation and distribution assumptions. Section IV analyzes the traffic for existing plus project conditions. Section V reviews the project's access, parking requirements, and on-site circulation. Section VI provides recommended mitigation measures and Section VII summarizes the report's findings and conclusions.



## SECTION II - EXISTING CONDITIONS

This section of the traffic study is intended to assess the existing conditions of the roadways and intersections within the vicinity of the project to determine travel flow and/or delay difficulties, if any, that exist prior to adding the traffic generated by the proposed project. The existing conditions analysis establishes a base condition which is used to assess the other scenarios discussed in this report.

Darnell & Associates, Inc. (D&A) conducted a field review of the area surrounding the project in October 2009-[and September 2011](#). The existing roadway geometrics are illustrated in Figure 4.

### EXISTING ROADWAY CHARACTERISTICS

The key segments analyzed in the study area are identified below:

**State Route 76/~~Pala Road~~ (SR-76-)/Mission Road:** State Route 76 (SR-76) is a circulation element roadway. Currently, SR-76 north of Mission Road is constructed as a two (2)-lane undivided roadway with varying shoulder widths between approximately 2 feet (2') to 8 feet (8') wide. The roadway widens out at the intersection with Mission Road to provide additional turn lanes and/or acceleration/deceleration lanes.

Between [South](#) Mission Road and Thoroughbred Lane, SR-76 is constructed to provide one (1)-lane in each direction with a painted median and varying shoulder widths between approximately 2 feet (2') to 8 feet (8') wide. Between Thoroughbred Lane and Olive Hill Road, SR-76 has two (2) northeast bound lanes, one (1) southwest bound lane, a raised median, and nominal shoulder widths. The roadway widens out at intersections to provide additional right turn lanes, left turn lanes, and/or acceleration/deceleration lanes.

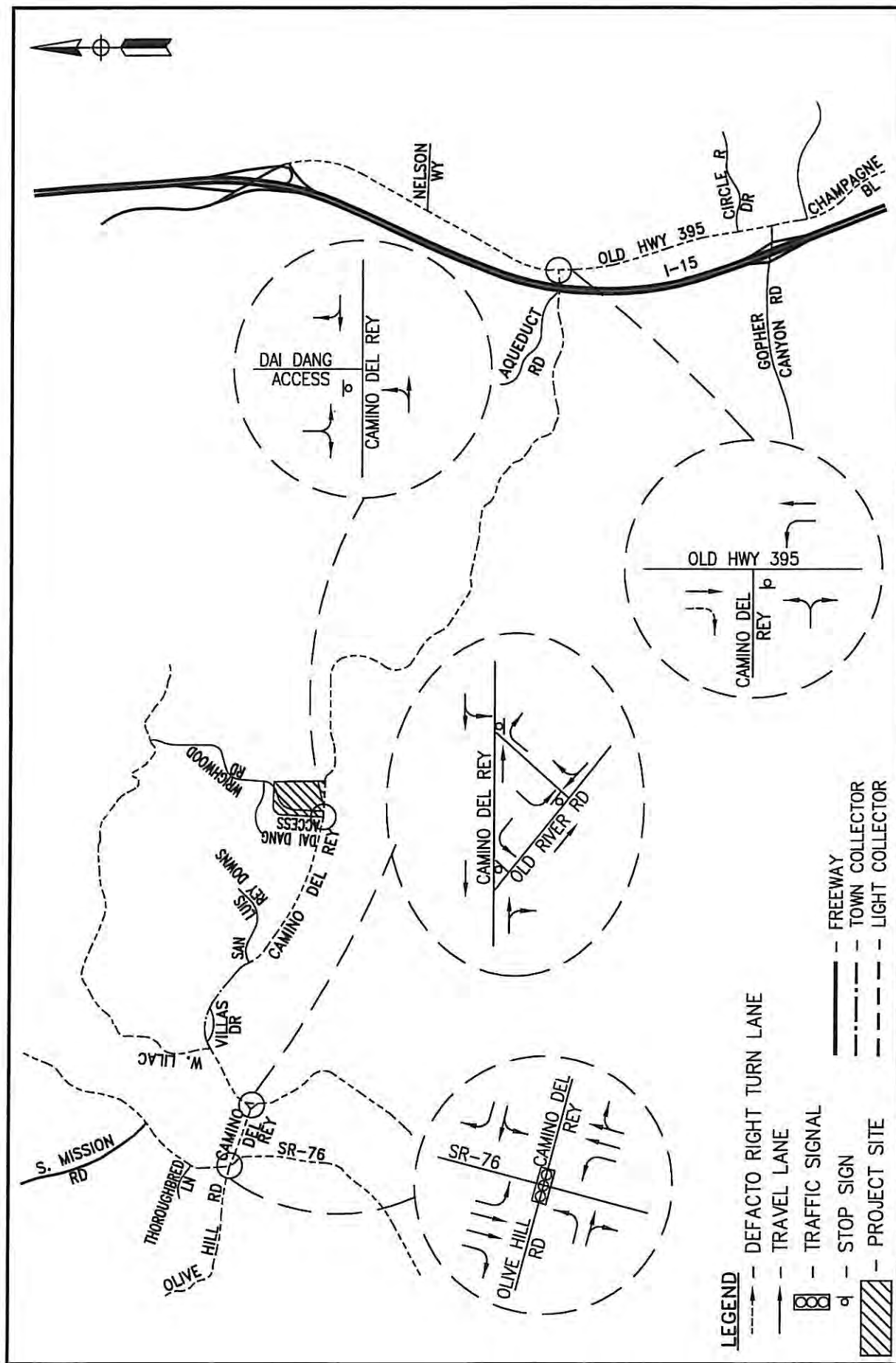
South of Olive Hill Road SR-76 is primarily constructed as a two (2) lane undivided roadway with approximately two (2) foot shoulders.

The current cross-section of the segments of SR-76 from north of [South](#) Mission Road to south of Olive Hill Road is estimated to be equivalent to that of a Light Collector with a capacity of 10,900 average daily trips (ADT) at Level of Service (LOS) D.

[Caltrans is currently working on the State Route 76 \(SR-76\) Middle project which covers the segment of SR-76 between Melrose Drive and South Mission Road. The SR-76 Middle project will expand and in some locations realign, SR-76 from Melrose Drive to South Mission Road to provide a four-lane conventional highway that can accommodate widening to six lanes. The segment of SR-76 between Olive Hill Road and South Mission Road has been designed and is currently being constructed to provide six \(6\) lanes. Caltrans began construction on the SR-76 Middle project in January 2010 and is scheduled to complete the project in December 2012.](#)

**Camino Del Rey:** Camino Del Rey is primarily an east-west circulation element roadway. With the exception of the segment between West Lilac Road and the entrance to San Luis Rey Downs, Camino Del Rey is constructed as a two-lane undivided roadway with varying shoulder widths between approximately 2 feet (2') to 8 feet (8') wide. The segment of Camino Del Rey between West Lilac Road and the entrance to San Luis Rey Downs is constructed to provide one (1) lane in each direction with a center two-way left turn lane (TWLTL). The posted speed limit on Camino Del Rey is 50 miles per hour (mph) between West Lilac Road and the Dai Dang project site and 45 miles per hour between the Dai Dang project site and Old Highway 395.

The cross-section of the two-lane segments of Camino Del Rey is estimated to be equivalent to that of a Light Collector with a capacity of 10,900 ADT at LOS D. While the cross-section of the segment of Camino Del Rey between West Lilac Road and the entrance to San Luis Rey Downs is estimated to be equivalent to that of a Town Collector with a capacity of 13,500 ADT at LOS D.



**FIGURE 4**  
EXISTING CONDITIONS

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**Old Highway 395:** Old Highway 395 is primarily a north-south circulation element roadway. Between Nelson Way and Gopher Canyon Road, Old Highway 395 is constructed as a two-lane undivided roadway with nominal to eight foot (8') wide shoulders. The cross-section of Old Highway 395 is estimated to be equivalent to that of a Light Collector with a capacity of 10,900 ADT at LOS D.

## ROADWAY SEGMENT DAILY TRAFFIC

Since the traffic generated by the project will occur on the weekend, ~~primarily on (Saturday and Sunday),~~ with the exception of the segment of SR-76 north of Mission Road and the segment of SR-76 between Mission Road and Olive Hill Road, twenty-four (24) hour count data was collected at the key roadway segments on a typical Saturday and Sunday. The segment of SR-76 north of Mission Road and the segment of SR-76 between Mission Road and Olive Hill Road were counted on a Monday because the California Highway Patrol (CHP) would not allow the road tubes to be placed down on a ~~Sunday~~weekend. The following summarizes the dates of when the key roadway segments were counted.

- ~~SR-76 - Mission Rd to Olive Hill Rd: Counted Mon. Aug. 31, 2009~~
- ~~SR-76 -~~ South of Olive Hill Rd: Counted Sun. August 30, 2009
- Camino Del Rey - SR-76 to Old River Rd: Counted Sun. Aug. 30, 2009 & Sat. Oct. 1, 2011
- Camino Del Rey - Old River Rd to West Lilac Rd: Counted Sat. Oct. 1, 2011
- Camino Del Rey - West Lilac Rd to Villas Dr: Counted Sun. Aug. 30, 2009
- Camino Del Rey - East of Via Maria Elena: Counted Sat. Oct. 1, 2011
- Camino Del Rey - Aqueduct Rd to Old Hwy 395: Counted Sun. Oct. 11, 2009 & Sat. Oct. 1, 2011
- Old Hwy 395 - Nelson Way to Camino Del Rey: Counted Sun. Oct. 11, 2009 & Sat. Oct. 1, 2011
- Old Hwy 395 - Camino Del Rey to Gopher Cyn Rd: Counted Sun. Oct. 11, 2009 & Sat. Oct. 1, 2011

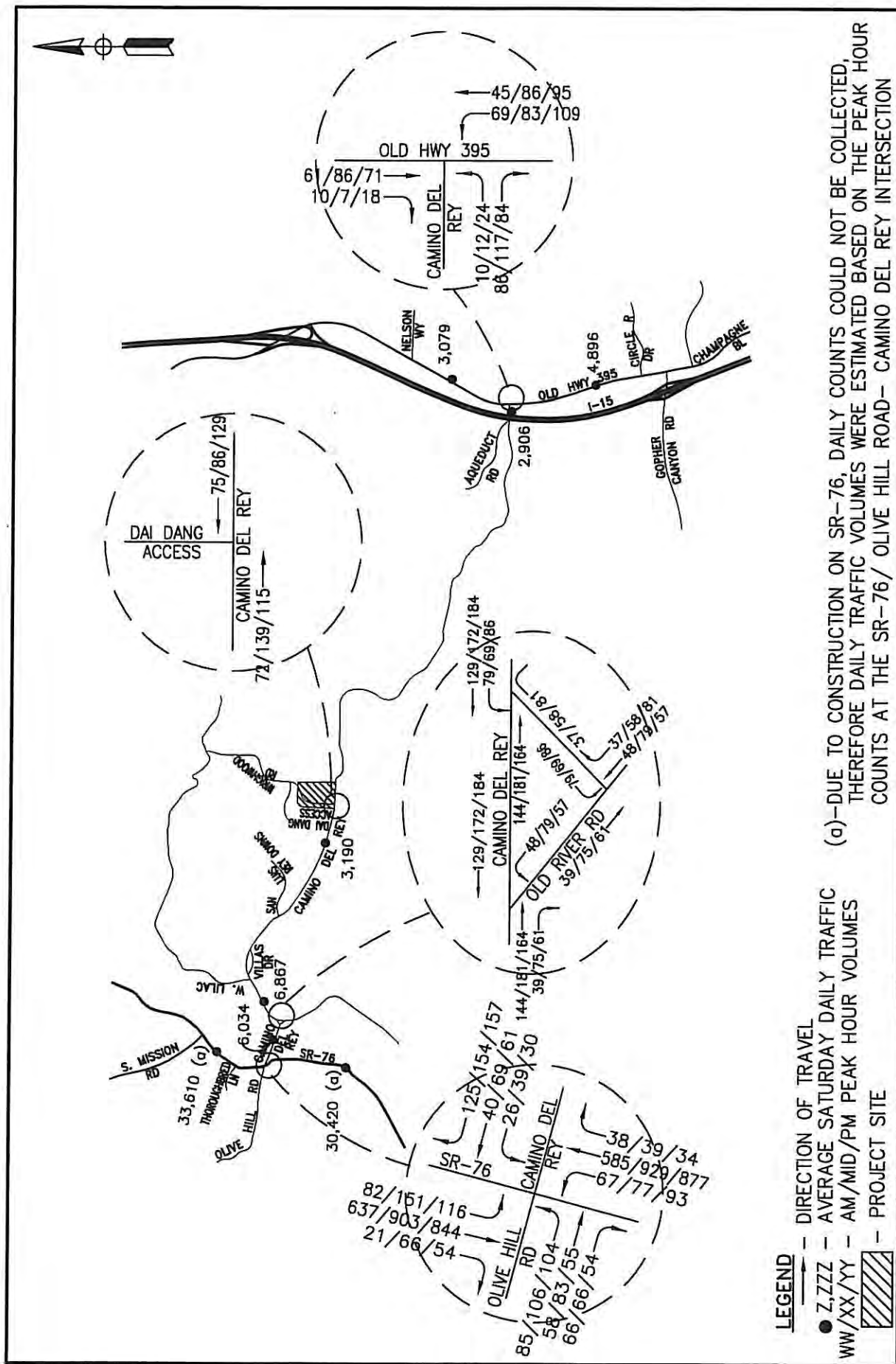
Count summary sheets can be found in Appendix A. The existing ~~conditions~~(2009) Sunday daily traffic volumes are illustrated in Figure 5: while the existing (2011) Saturday daily traffic volumes are illustrated in Figure 6.

## KEY INTERSECTIONS

Figure 4 provides intersection configurations and traffic control for the key intersections. The key intersections analyzed in the study area are identified below:

- ~~State Route 76 (Pala Road)/S. Mission Road (Signalized);~~
- State Route 76 (Pala Road)/Olive Hill Road -Camino Del Rey (Signalized);
- West Camino Del Rey/West Old River Road (Stop-Controlled on Northbound Approach);
- East Camino Del Rey/East Old River Road (Stop-Controlled on Northbound Approach);
- West Old River Road/East Old River Road (Stop-Controlled on Westbound Approach);
- Camino Del Rey/Dai Dang Project Access (Stop-Controlled on Southbound Approach); and
- Camino Del Rey/Old Highway 395 (Stop-Controlled on Eastbound Approach).





(a) — DUE TO CONSTRUCTION ON SR-76, DAILY COUNTS COULD NOT BE COLLECTED, THEREFORE DAILY TRAFFIC VOLUMES WERE ESTIMATED BASED ON THE PEAK HOUR COUNTS AT THE SR-76/ OLIVE HILL ROAD — CAMINO DEL REY INTERSECTION

**FIGURE 6**  
**EXISTING (2011) SATURDAY TRAFFIC VOLUMES**

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## INTERSECTION TRAFFIC COUNTS

Since the traffic generated by the project will occur on the weekend, ~~primarily on~~ (Saturday and Sunday), AM, mid-day, and PM, peak hour turn counts were collected at the key intersections on a typical Saturday and Sunday. The following summarizes the dates of when the key intersections were counted.

- ~~State Route 76 (Pala Road)/S. Mission Road: Counted Sunday, August 30, 2009~~
- SR-76 ~~(Pala Road)~~ Olive Hill Rd-Camino Del Rey: Counted Sun. Aug. 30, 2009 & Sat. Oct. 1, 2011
- West Camino Del Rey/West Old River Rd: Counted Sun. Aug. 30, 2009 & Sat. Oct. 1, 2011
- East Camino Del Rey/East Old River Rd: Counted Sun. Aug. 30, 2009 & Sat. Oct. 1, 2011
- West Old River Rd/East Old River Rd: Counted Sun. Aug. 30, 2009 & Sat. Oct. 1, 2011
- Camino Del Rey/Old Hwy 395: Counted Sun. Oct. 11, 2009 & Sat. Oct. 15, 2011

The eastbound and westbound through traffic volumes at the Camino Del Rey/Dai Dang project access were obtained from the 24-hour traffic counts collected on the roadway segment of Camino Del Rey in front of the project site. ~~Figure 5 presents the existing conditions traffic volumes used in this analysis. Count summaries are included in Appendix A.~~

Figure 5 illustrates the existing (2009) Sunday peak hour traffic volumes while Figure 6 illustrates the existing (2011) Saturday peak hour traffic volumes utilized in this analysis. Count summaries are included in Appendix A.

## EXISTING LEVEL OF SERVICE CONDITIONS

### Roadway Segments

Table 2 summarizes the daily segment analysis for the existing weekend (Saturday and Sunday) traffic conditions. Table 2 shows that based on daily capacity, the segment of State Route 76 (SR-76) from ~~north of~~ South Mission Road to south of Olive Hill Road currently operates at LOS F under both Saturday and Sunday conditions. All other roadway segments analyzed currently operate at an acceptable LOS C or better under existing conditions on Saturday and Sunday.

### Intersections

Table 3 illustrates the existing intersection levels of service summary for the existing weekend (Saturday and Sunday-traffic) conditions. As can be seen from Table 3, all key intersections operate at an acceptable LOS C or better under existing Saturday and Sunday conditions during the AM, mid-day, and PM peak hours. A copy of the Synchro worksheets for the existing conditions can be found in Appendix C.



Table 2 – Existing <del>Sunday</del> Weekend Daily Level of Service Summary						
Roadway Segment	Classification	LOS D Capacity	Saturday (a)		Sunday (b)	
			ADT	LOS	ADT	LOS
<b>State Route 76</b> n/o S. Mission Rd. <del>(a)</del> S. Mission Rd. to Olive Hill Rd. <del>(a)</del> s/o Olive Hill Rd.	Light Collector Light Collector	10,900 10,900	<u>33,610 (c)</u> <u>30,420 (c)</u>	<u>F</u> <u>F</u>	<del>23,226</del> <u>41,618 (d)</u> <b>30,864</b>	<del>F</del> <b>F</b> <b>F</b>
<b>Camino Del Rey</b> SR-76 to Old River Rd. Old River Rd. to <del>Bonsall H.S.</del> West Lilac Rd. <del>Bonsall H.S. to W. Lilac</del> <del>W. West Lilac Road Rd.</del> to Villas Drive Villas Drive to Project Access Project Access to Aqueduct Rd Aqueduct Rd. to Old Hwy. 395	Light Collector Light Collector <del>Light Collector</del> Town Collector Light Collector Light Collector Light Collector	10,900 10,900 <del>10,900</del> 13,500 10,900 10,900 10,900	<u>6,034</u> <u>6,867</u> <del>10,900</del> <u>6,867</u> <u>3,190</u> <u>3,190</u> <u>2,906</u>	<u>C</u> <u>C</u> <del>C</del> <u>C</u> <u>B</u> <u>B</u> <u>B</u>	6,760 6,760 <del>6,760</del> 5,077 5,077 2,497 2,497	C C <del>C</del> <u>EB</u> C B B
<b>Old Highway 395</b> Nelson Way to Camino Del Rey Camino Del Rey to Gopher Canyon Rd.	Light Collector Light Collector	10,900 10,900	<u>3,079</u> <u>4,896</u>	<u>B</u> <u>C</u>	1,923 3,883	B B
ADT = Average Daily Traffic, LOS = Level of Service (a) Existing Saturday Counts were collected in October 2011 (b) Existing Sunday Counts were collected in August and October 2009 (c) Due to construction on the SR-76, daily traffic counts could not be collected; therefore, daily volumes were estimated based on peak hour counts at the SR-76- Mission Road/Olive Hill Road-Camino Del Rey intersection (d) Volume is representative of Monday traffic, all other volumes are representative of Saturday and Sunday traffic conditions						

Table 3 - Existing <del>Sunday</del> Weekend Intersection Level of Service Summary								
Intersection	Traffic Control	Critical Move	AM Peak Hour		Mid-Day Peak Hour		PM Peak Hour	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Saturday Conditions								
SR-76-Mission Rd. (N-S) @ Olive Hill Rd.-Camino Del Rey (E-W)	Sig.	Int.	19.9	B	29.8	C	23.0	C
W. Camino Del Rey (E-W) @ W. Old River Rd. (N-S)	OWSC	NBL	11.0	B	12.2	B	11.7	B
E. Camino Del Rey (E-W) @ E. Old River Rd. (N-S)	OWSC	NBR	9.3	A	9.6	A	9.6	A
W. Old River Rd. (N-S)@ E. Old River Rd. (E-W)	OWSC	WBL	9.6	A	10.0	A	10.0	A
Camino Del Rey (E-W) @ Old Highway 395 (N-S)	OWSC	EB NBL	9.5 7.5	A A	9.7 7.6	A A	10.0 7.6	A A
Sunday Conditions								
SR-76-Pala Rd (N-S) @ S. Mission Rd (E-W)	Sig.	Int.	9.9	A	15.3	B	11.7	B
SR-76- Mission Rd Pala Rd (N-S) @ Olive Hill Rd-Camino Del Rey (E-W)	Sig.	Int.	18.1	B	30.2	C	22.6	C
W. Camino Del Rey (E-W) @ W. Old River Rd. (N-S)	OWSC	NBL	10.2	B	12.1	B	11.9	B
E. Camino Del Rey (E-W) @ E. Old River Rd. (N-S)	OWSC	NBR	9.1	A	9.8	A	9.5	A
W. Old River Rd. (N-S)@ E. Old River Rd. (E-W)	OWSC	WBL	9.0	A	10.4	B	10.0	A
Camino Del Rey (E-W) @ Old Highway 395 (N-S)	OWSC	EB NBL	9.0 7.4	A A	9.5 7.5	A A	9.4 7.5	A A
sec/veh = seconds of delay per vehicle; LOS = Level of Service; E-W = East-West Street; N-S = North-South Street Int. = Intersection; Sig. = Signalized; OWSC = One-Way Stop-Controlled EB = Eastbound Approach; WBL = Westbound Left; NBL = Northbound Left; NBR = Northbound Right								

## SECTION III - PROJECT RELATED CONDITIONS

### TRIP GENERATION

The trip generation potential for a project is estimated based on the project's land use characteristics. In the San Diego area, there are three sources that provide standard trip generation rates for various land use types: (1) The San Diego Association of Governments' (SANDAG) *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, (2) The City of San Diego *Trip Generation Manual*, and (3) the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 8<sup>th</sup> Edition. Although these sources have published rates for a standard church or temple, the proposed project will not operate like a typical church or temple. None of the trip generation sources listed above have published rates for a Buddhist Meditation Center and Monastery with operational characteristics similar to the proposed project. Therefore, since the Dai Dang Meditation Center is currently in operation and the proposed MUP just proposes to expand on the existing operation and provide more/improved facilities to accommodate the visitors that attend the center; the trip generation for the project was estimated based on the operation of the existing facility.

#### Operating Characteristics

The purpose of the proposed meditation center is to create a non-stressful environment open to all people, Buddhists and non-Buddhists, who are interested in practicing the religion. There are no choirs or children's activities that will take place during the week or after normal business hours. The center will operate from 9:00 a.m. to 6:00 p.m. on weekends. There is no retail component (e.g., gift shop or other sales program) proposed with the project. During the week, the Dai Dang Meditation Center is an instructional facility for the ~~resident Monks onsite.~~ ~~Resident Monks~~ on-site residents. On-site residents maintain a Spartan lifestyle, consistent with the Buddhist teachings and adhere to a daily regimen of studying, silent meditation, silent communal meals, and maintenance of the facility. ~~Resident monks~~ On-site residents live onsite until their studying is finished. ~~The Monks~~ On-site residents drive a few times a week to run errands for the temple. They do not ~~drive cars,~~ watch TV, or listen to the radio, and they are discouraged from creating loud noises while staying at the monastery. No visitors are allowed on the facility after 5:00 p.m. For these reasons, the proposed meditation center and monastery does not function in the same way as a typical church or temple.

On the typical weekend (Saturday and Sunday) ~~service~~ the facility will be open to visitors who come to the facility for worship, meditation, a silent communal lunch, and a question and answer period with the headmaster. The normal weekend (Saturday and Sunday) meditation activity generally attracts up to 300 people. ~~These~~ The typical Sunday weekend services will occur approximately 52 ~~times~~ weekends per year.

#### Trip Generation Rate Calculations

##### *Weekday Activity*

As discussed above, during the week the Dai Dang Meditation Center is an instructional facility for the ~~resident Monks onsite~~ on-site residents, who consistent with the Buddhist teachings adhere to a daily regimen of studying, silent meditation, silent communal meals, and maintenance of the facility. Since the ~~Monks do not drive cars~~ on-site residents only drive a few times a week to run errands for the temple and since no visitors are allowed on the facility after 5:00 p.m. there will be very nominal traffic generated to/from the facility during the weekday. Thus, this study concentrates on the traffic that will be generated by the project on the weekend based on the typical ~~Sunday/~~weekend (Saturday and Sunday) Meditation Activity. Further, the August 17, 2006 *Traffic Study for Dai Dang Meditation Center (P04-016)* prepared by D&A focused on the potential impacts that the Dai Dang Meditation Center project may have on weekday traffic conditions. No significant impacts were identified on any of the key roadway segments or intersections analyzed.



### Typical ~~Sunday~~Weekend Meditation Activity

To calculate the trip generation rate to be utilized for the proposed project for the typical ~~Sunday~~/weekend activity, D&A compared the record of the number of guests that attended the Dai Dang Meditation Center on Sunday May 10, 2009 to the number of daily vehicles that were recorded to be entering/exiting the project access into the Dai Dang Center off Camino Del Rey on the same day. Based on the data obtained on Sunday May 10, 2009, which is representative of the typical ~~Sunday~~weekend meditation activity, there were 289 guests that entered the facility between 7:00 AM and 12:00 PM and an additional 14 guests who arrived at the facility after lunch, for a total of 303 guests ( $289 + 14 = 303$ ) for the day. The driveway count for May 10, 2009 recorded that there were 303 two-way (entering/exiting) trips at the driveway. Thus the average number of daily trips per guests is calculated to be 1.0 daily trips per guest (i.e.  $303 \text{ daily trips} / 303 \text{ guests} = 1.0 \text{ daily trips per guest}$ ).

To verify the accuracy of the trip generation rate calculated based on only one day's worth of data, D&A reviewed the average vehicle occupancy data and number of guests that was recorded for the Dai Dang Meditation Center for every Sunday between July 20, 2008 and March 8, 2009. A review of the data found that over the 54 Sundays worth of data that the vehicle occupancy ranged from a low 1.7 people per car to a high of 2.6 people per car with an average of 2.1 people per car. The number of daily guests ranged from a low of 49 to a high of 303, with an average of 93 guests per day. If the average vehicle occupancy rate of 2.1 people per car were utilized with the projected maximum attendance of 300 guests, that would yield a total of ~~145~~143 cars (i.e.  $300 \text{ guests} / 2.1 \text{ guests per car} = 143 \text{ cars}$ ). If each car makes two (2) daily trips, one (1) into and one (1) out of the site, then there would be a total of 286 daily trips ( $143 \text{ cars} \times 2 \text{ trips per car} = 286 \text{ daily trips}$ ). This would yield an average trip rate of 0.95 daily trips per guest (i.e.  $286 \text{ daily trips} / 300 \text{ guest} = 0.95 \text{ daily trips per guest}$ ). This validates the trip generation rate calculated from the driveway counts collected on May 10, 2009. Thus, for the purpose of this report, a trip generation rate of 1.0 daily trips per guest was utilized to estimate the trip generation associated with the typical weekend (Saturday and Sunday) Meditation Activity.

To estimate the AM, mid-day, and PM peak hour trip generation rates as a percentage of the daily traffic, D&A found the highest peak hour number of trips that entered the project driveway on Sunday May 10, 2009 between 8 a.m. – 10 a.m.; 11 a.m. – 1 p.m., and 2 p.m. – 5 p.m. respectively and compared it to the total number of trips that entered/exited the driveway over the 24-hour period.

Table 4 provides a summary of the daily trip generation rate calculations and Table 5 provides a summary of the trip generation rate calculations for the AM, mid-day, and PM peak hours. A copy of the driveway count sheets from May 10, 2009, and a copy of the Dai Dang Meditation Center Log of Number of Guests and Vehicle Occupancy information from July 20, 2008 through August 2, 2009 are provided in Appendix B.

It should be noted that on occasion, some of the visitors to the Dai Dang Meditation Center are brought in via a 25 to 50 passenger bus. These buses are privately contracted and must preregister with the Dai Dang Meditation Center prior to arriving to insure that the maximum occupancy of 300 guests does not get exceeded. The utilization of the buses will increase the average vehicle occupancy thus reducing the trip generation rate and average trip generation associated with the proposed project. Since the buses are privately contracted; however, and since these buses will be used only four (4) times per year but not every weekend; the trip generation calculations and project impacts were conducted based on the assumption that there would be no bussing. This provides the worst-case assessment of the project's potential traffic impacts.

<b>Table 4 –Average Daily Trip Generation Rates for Typical <u>Sunday</u><u>Weekend</u> Meditation Activity</b>						
Data Type	# of Guests	# People/Car	# Cars	Trips/Car	# Daily Trips	Daily Trips/Guest
Actual	303	2.5	128	2.4	303	<b>1.00</b>
Projected	300	2.1	143	2.0	286	0.95
Actual Data is based on Sunday May 10, 2009 Driveway Counts & Attendance information obtained from the Dai Dang Meditation Center						
Projected Data is based on the projected maximum attendance and average vehicle occupancy that was observed to occur between July 20, 2008 and August 2, 2009						

Table 5 - Peak Hour Trip Generation Rates for Typical <span style="color: red;">Sunday</span> <span style="color: blue;">Weekend</span> Meditation Activity									
Daily Trips	AM Peak Hour Trips (8:15 a.m. - 9:15 a.m.)			Mid-Day Peak Hour Trips (12:15 p.m. - 1:15 p.m.)			PM Peak Hour Trips (2:00 p.m. - 3:00 p.m.)		
Sunday May 10, 2009 Driveway Counts									
303	Total	In	Out	Total	In	Out	Total	In	Out
	55	50	5	78	4	74	21	5	16
Estimated Peak Hour Trip Generation Rates									
-	% of Daily	% In	% Out	% of Daily	% In	% Out	% of Daily	% In	% Out
	18%	91%	9%	26%	5%	95%	7%	24%	76%
Actual Data is based on Sunday May 10, 2009 Driveway Counts									

### Trip Generation Calculations

Utilizing the trip generation rates summarized in Tables 4 and 5 for the typical Sundayweekend activity D&A estimated the daily, AM peak hour, mid-day peak hour, and PM peak hour, for the typical weekend (Saturday and Sunday) meditation activity assuming a maximum of 300 guests. Table 6 provides a summary of the trip generation calculations.

As summarized in Table 6, based on a projected attendance of up to 300 guests, the proposed project will generate 300 average daily trips, 54 AM peak hour trips, 78 mid-day peak hour trips, and 21 PM peak hour trips during the typical weekend (Saturday and Sunday) meditation activity.

### TRIP DISTRIBUTION/TRIP ASSIGNMENT

The trip distribution for the typical Sunday meditation activity was estimated based on the survey that D&A conducted at the Dai Dang Meditation Center driveway on Sunday August 17, 2009 between 8:00 a.m. and 5:00 p.m. Based on the August 17, 2009 survey, the traffic coming into/out of the project site was oriented approximately 40% to/from the west and approximately 60% to/from the east.

Figures 67 illustrates the trip distribution percentages for the typical Sundayweekend Meditation Activity. The project traffic was assigned to the adjacent roadway network based on the distribution percentages illustrated in Figure 67. The resulting project related traffic volumes for the typical Sundayweekend meditation activity is illustrated in Figure 78. ~~The impacts associated with the addition of project traffic are discussed in the following section, Section IV.~~

Table 6 - Trip Generation Calculations Summary																							
Land Use	# of Units	Unit	Trip Generation Rates										Trip Generation										
			Daily	AM Peak Hour			Mid Peak Hour			PM Peak Hour				Daily	AM Peak Hour			Mid Peak Hour			PM Peak Hour		
				Total (% of Daily)	% In	% Out	% Total (% of Daily)	% In	% Out	% Total (% of Daily)	% In	% Out	% Total (% of Daily)		% In	% Out	% Total (% of Daily)	% In	% Out				
Typical Sunday Meditation Activity																							
Passenger Cars	300	Guests	1.00	18.0%	91%	9%	26.0%	5%	95%	7.0%	24%	76%	300	54	49	5	78	4	74	21	5	16	
<b>Total:</b>	<b>300</b>	<b>Guests</b>											<b>300</b>	<b>54</b>	<b>49</b>	<b>5</b>	<b>78</b>	<b>4</b>	<b>74</b>	<b>21</b>	<b>5</b>	<b>16</b>	
See Table 4 for Daily Trip Generation Rates and Table 5 for Peak hour Trip Generation Rates																							

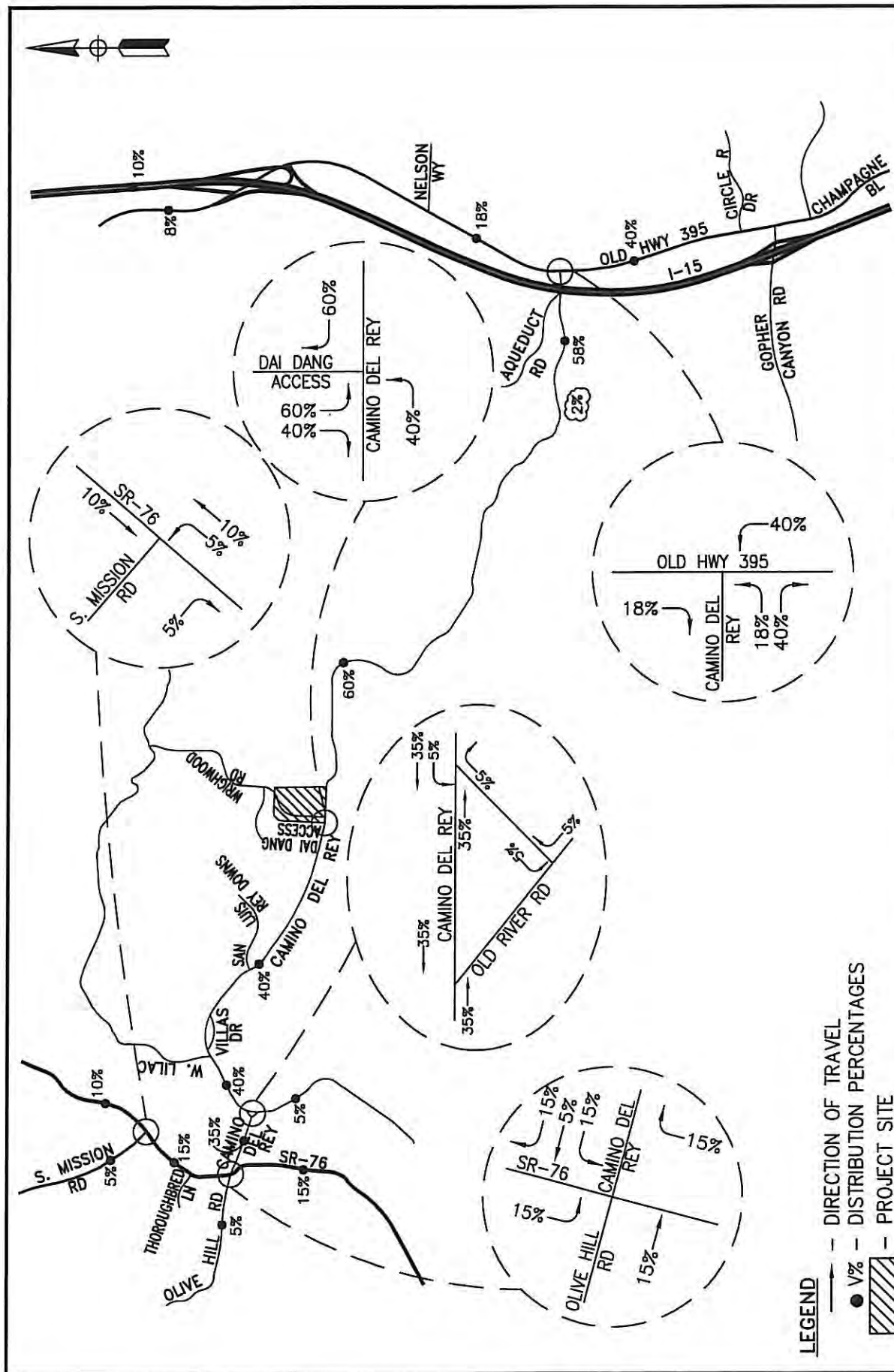


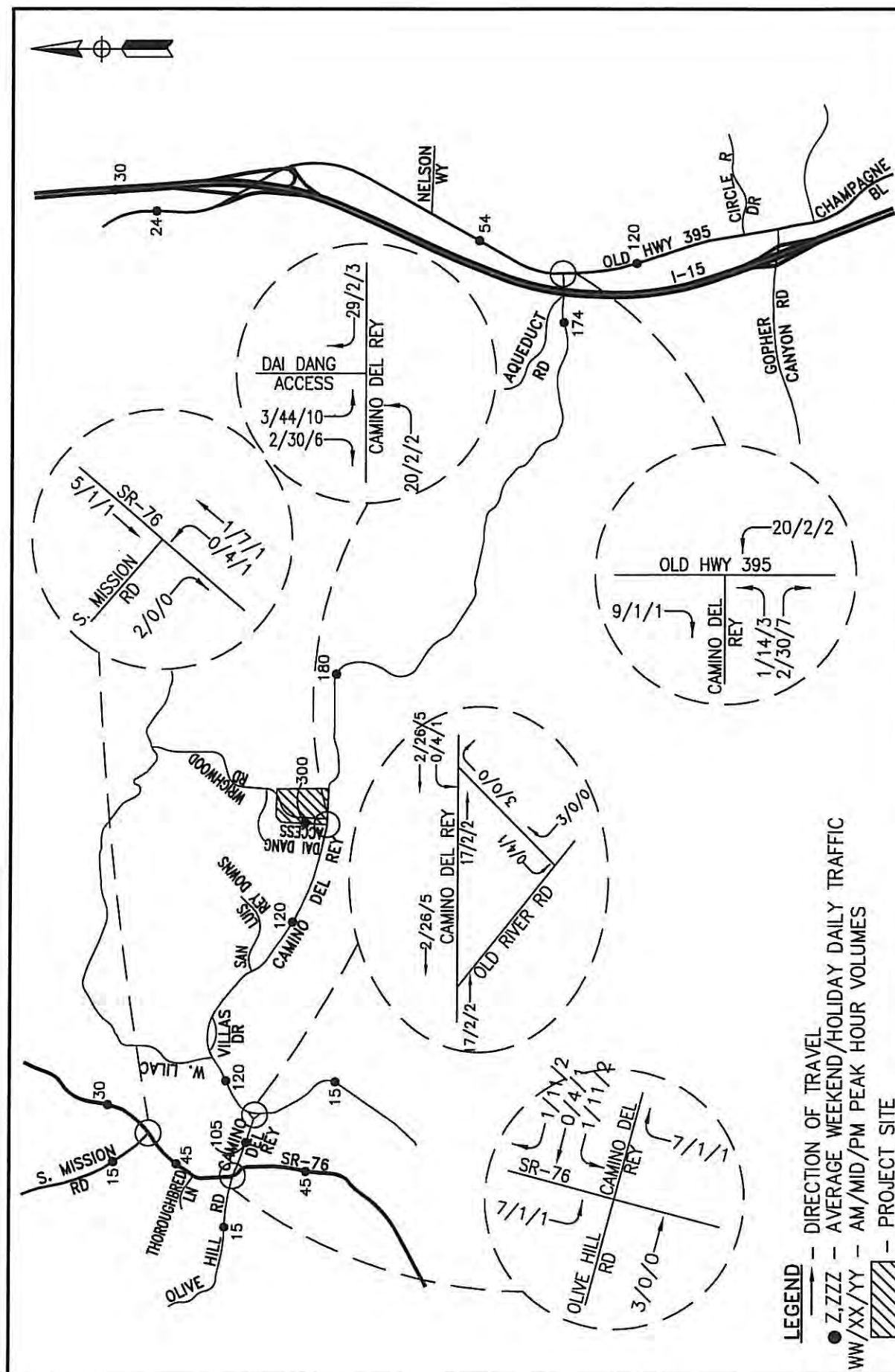
FIGURE 7

TRIP DISTRIBUTION PERCENTAGES FOR TYPICAL WEEKEND ACTIVITY

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## STUDY AREA

To determine the study area for the project D&A utilized the County of San Diego's criteria which recommends the inclusion of all transportation facilities that receive 25 or more peak hour trips from the proposed project.

Based on the County's criteria of 25 peak hour trips and a review of Figure 8, it was determined that the study area for the project needed to include the following roadway segments and intersections: (1) Camino Del Rey between SR-76 and Old Highway 395; (2) Old Highway 395 between Camino Del Rey and Gopher Canyon Road; (3) the SR-76-Mission Road/Olive Hill Road-Camino Del Rey intersection; (4) the Camino Del Rey/Old River Road intersection; (5) the Camino Del Rey/Project Access intersection; and (5) the Camino Del Rey/Old Highway 395 intersection. Although not required to be analyzed per the County's criteria, the study area was expanded to include the segments of SR-76 (Mission Road) just north and south of Olive Hill Road-Camino Del Rey) and the segment of Old Highway 395 just north of Camino Del Rey.

The impacts associated with the addition of project traffic are discussed in the following section, Section IV.

## SECTION IV – IMPACTS

### PUBLIC FACILITIES ELEMENT IN COUNTY

According to page XII-4-20 of the *Public Facility Element* for San Diego County, a discretionary project which has a significant impact on roadways will be required, as a condition of approval, to make “improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below ‘D’ on off-site and on-site abutting Circulation Element roads. New development that would significantly impact congestion on roads at LOS ‘E’ or ‘F’, either currently or as a result of the project, will be denied unless improvements are scheduled to increase the LOS to ‘D’ or better or appropriate mitigation is provided. Appropriate mitigation would include a fair share contribution in the form of road improvements or a fair share contribution to an established program or project. If impacts cannot be mitigated, the project will be denied unless a specific statement of overriding findings is made pursuant to Section 15091(b) and 15093 of the State CEQA Guidelines.” A copy of excerpts from the County’s *Public Facility Element* can be found in Appendix A.

### LEVELS OF SIGNIFICANCE STANDARDS

The *County of San Diego Guidelines for Determining Significance, First Modification February 19, 2010* was developed to evaluate the significance of traffic impacts on roadways and intersections which currently operate at LOS E or F. A summary of the County’s Guidelines is provided in Table 7.

Table 7 - Measures of Significant Project Impacts					
LOS	Allowable Increase on Congested Roads and Intersections				
	Signalized	Unsignalized Intersections	Road Segments		
			2-Lane Road	4-Lane Road	6-Lane Road
LOS E	Delay of 2 seconds or less	20 or less peak hour trips on a critical movement	200 ADT	400 ADT	600 ADT
LOS F	Either a Delay of 1second, or 5 peak hour trips or less on a critical movement	5 or less peak hour trips on a critical movement	100 ADT	200 ADT	300 ADT
Notes: – A critical movement is an intersection movement (right turn, left turn, through-movement) that experiences excessive queues, which typically operate at LOS F. Also if a project adds significant volume to a minor roadway approach, a gap study should be provided that details the headways between vehicles on the major roadway. – By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes additional trips must mitigate a share of the cumulative impacts. – The County may also determine impacts have occurred on roads even when a project’s traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity. – For determining significance at signalized intersection with LOS F conditions, the analysis must evaluate both the delay and the number of trips on a critical movement, exceedance of either criteria result in a significant impact.					
ADT = Average Daily Traffic; LOS = Level of Service, sec = Seconds of Delay per Vehicle					

### Roadway Segments

As shown in Table 7, per the County’s Guidelines, “traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a road segment:

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Circulation Element Road or State Highway currently operating at LOS E or LOS F, or will cause a Circulation Element Road or State Highway to operate at a LOS E or LOS F as a result of the proposed project as identified in Table [7], or
- The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity.”

As discussed on pages 13 and 14 of the *County of San Diego Guidelines for Determining Significance, First Modification February 19, 2010*, an increase of the daily thresholds established for roadway segments operating at LOS E would result in only one additional car every 2.4 minutes per lane while the thresholds established for roadway segments operating at LOS F would result in only one additional car every 4.8 minutes. Therefore, the thresholds identified in Table 7, in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and would thus not constitute a significant impact on the roadway.

### **Signalized Intersections**

“Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a signalized intersection”:

- “The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F, or will cause a signalized intersection to operate at a LOS E or LOS F as identified in Table [7].”
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.”

As discussed on page 16 of the *County of San Diego Guidelines for Determining Significance, First Modification February 19, 2010*, an increase in delay of two seconds or less, the threshold established for signalized intersections operating at LOS E, “...is a small fraction of the typical cycle length for a signalized intersection that ranges between 60 and 120 seconds. The likelihood of increased queues forming due to the additional two seconds of delay is low.” Thus, the increase in delay of two (2) seconds or less, on average, would result in changes to traffic flow that would not be noticeable to the average driver and would thus not constitute a significant impact. Since small changes and disruptions to the traffic flow at a signalized intersection can have a greater effect on the overall intersection operation when the intersection is operating at LOS F, versus LOS E, a more stringent guideline of one (1) second of delay was established for intersections operating at LOS F.

The five (5)-peak hour trip threshold, established for the critical movement of a signalized intersection operating at LOS F, when spread out over the peak hour, results in an increase of one (1) vehicle every 12 minutes or 720 seconds. This increase would not be noticeable to the average driver because one additional vehicle during a 12-minute interval on average would clear the traffic signal cycles well within the 12-minute period. Further, even if all five (5) additional peak hour vehicles arrived at the same time, these trips would also, on average, clear the traffic cycle and the existing queue lengths would be re-established. Thus, the increase of five (5) peak hour trips to a critical movement at a signalized intersection, on average, would result in changes to traffic flow that would not be noticeable to the average driver and would thus not constitute a significant impact. (See page 17 of the County’s *Guidelines for Determining Significance* provided in Appendix A.)



## Unsignalized Intersections

“Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant impact at an unsignalized intersection as listed in Table [7] and described as text below:”

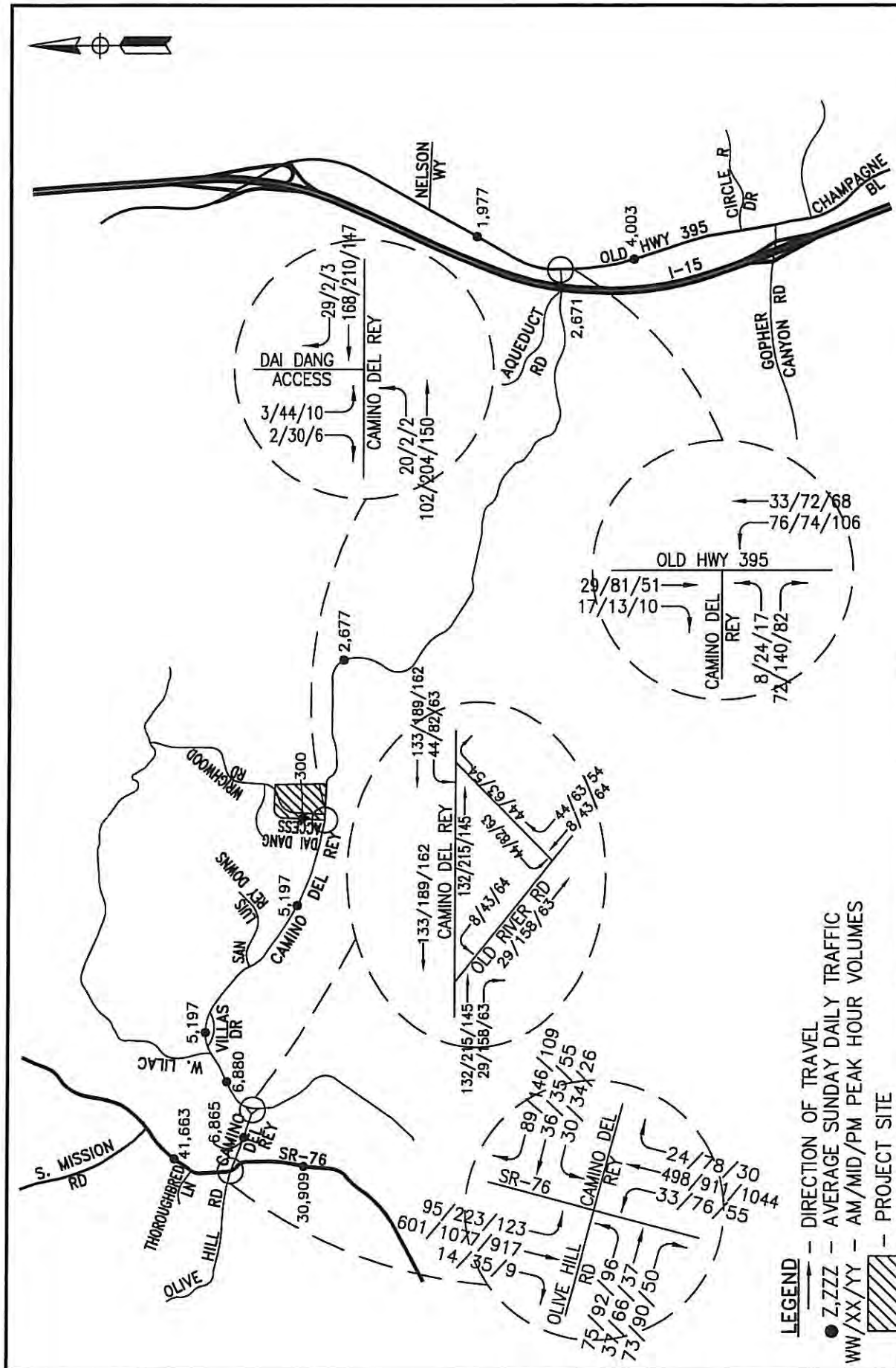
- “The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D, or
- The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or
- The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F, or
- The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F, or
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.”

As discussed on page 18 of the *County of San Diego Guidelines for Determining Significance, First Modification February 19, 2010*, the addition of 20 peak hour trips to a critical movement, would result in an increase of one (1) vehicle every 3.0 minutes or 180 seconds. “Assuming the average wait time for a vehicle in the critical movement queue is less than 3.0 minutes, which is typical for LOS E conditions; this would not be noticeable to the average driver and would not be considered a significant impact.” Five (5) – trips spread out over an hour would result in an increase of one (1) vehicle every 12.0 minutes or 720 seconds. “This typically exceeds the average wait time in the queue and would not be noticeable to the average driver.” (See page 18 of the County’s *Guidelines for Determining Significance* provided in Appendix A.)

Consistent with the *Public Facility Element* the criteria described above for roadway segments and intersections were applied to segments and intersections that operate at LOS E or LOS F. It should be noted that as outlined in the *Public Facility Element*, if the addition of the project reduces an acceptable level of service (LOS D or better) to an unacceptable level (LOS E or F), it is considered to be significant regardless of the volume of traffic it adds to the segment or intersection. It should be noted that the significance guidelines summarized in Table 6 are currently only utilized by the County of San Diego to determine if a project has a significant direct and/or future impact. A project is considered to have a significant cumulative impact if it adds any traffic to a roadway segment and/or intersection that operates at LOS E or F under cumulative conditions and the total cumulative traffic added to the roadway segment and/or intersection exceeds the value identified in Table 7.

## EXISTING PLUS PROJECT CONDITIONS

The traffic generated by the proposed project was added onto the existing Sunday [and Saturday](#) traffic volumes collected in the field. The daily and peak hour turn volumes for existing plus typical [Sunday weekend](#) Meditation activity conditions are illustrated in [Figure 8](#) [Figures 9 and 10 for the Sunday and Saturday conditions, respectively](#).

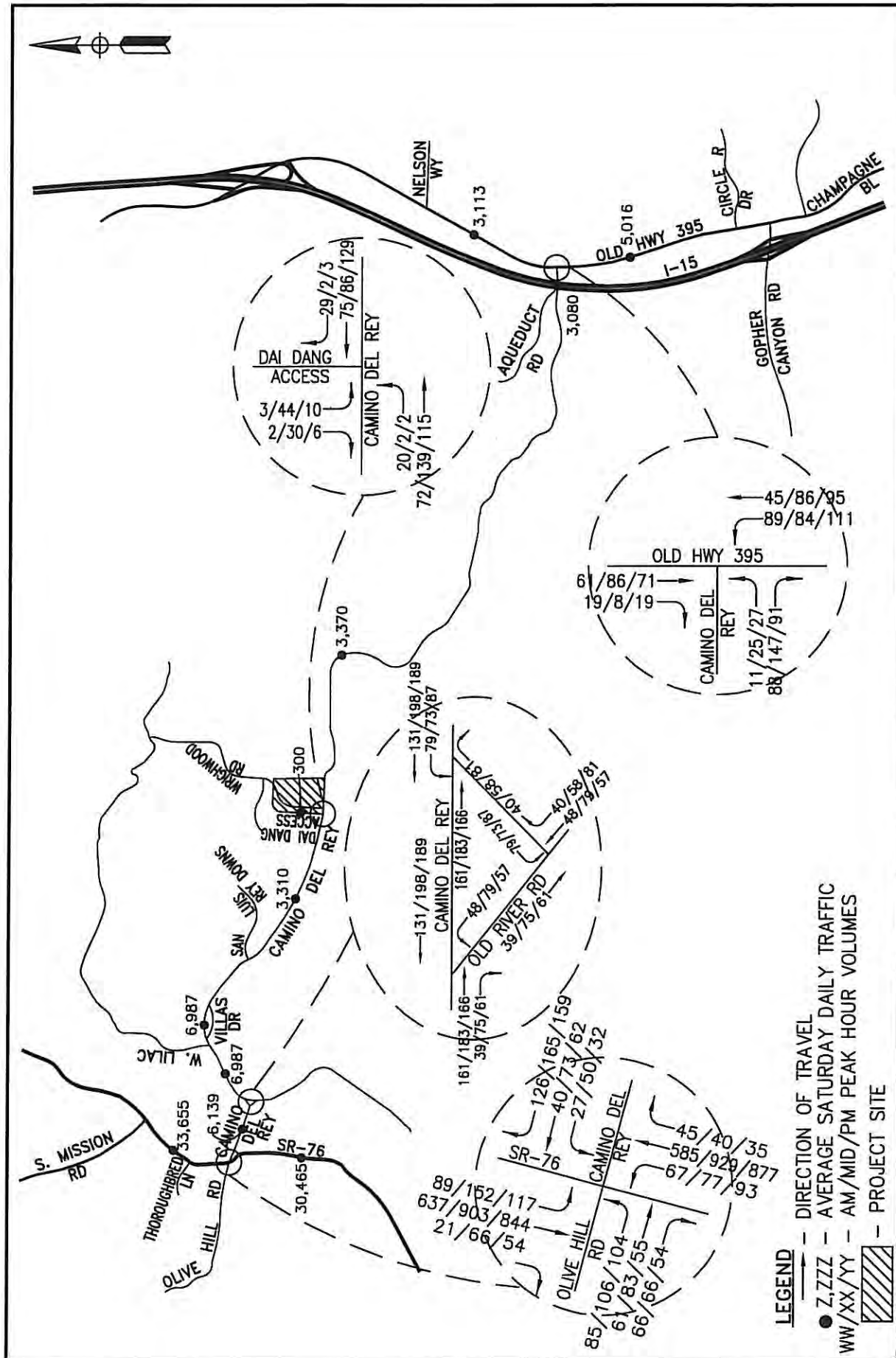


**FIGURE 9**  
EXISTING (2009) SUNDAY TRAFFIC + TYPICAL WEEKEND MEDITATION ACTIVITY

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**FIGURE 10**

EXISTING (2011) SATURDAY TRAFFIC + TYPICAL WEEKEND MEDITATION ACTIVITY

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## Roadway Segments

The roadway segments were analyzed with the traffic generated from the proposed project added to existing Saturday and Sunday traffic volumes. The roadway segments daily levels of service are summarized in Table 8. As illustrated in Table 8, with the exception of the segments of SR-76 from ~~north of~~ South Mission Road to south of Olive Hill Road, all key roadway segments continue to operate at an acceptable LOS C or better under existing plus project conditions: under Saturday and Sunday conditions.

The segment of State Route 76 (SR-76) ~~from north of~~ between South Mission Road ~~to~~ and south of Olive Hill Road operates at LOS F under existing conditions: under both Saturday and Sunday conditions. With the addition of ~~between~~ 30 to 45 ADT associated with the typical Sunday weekend Meditation Activity this segment of State Route 76 (SR-76) will continue to operate at LOS F. Since the project traffic added to this segment of State Route 76 (SR-76) is less than the 100 ADT allowed per the County of San Diego's Guidelines for Determining Significance for a two lane roadway operating at LOS F, it is concluded that the project will not significantly impact congestion. Thus, the proposed project is not considered to have a significant direct impact on the segment of State Route 76 (SR-76) from ~~north of~~ South Mission Road to south of Olive Hill Road.

## Intersections

The intersections were analyzed with the traffic generated from the proposed project added to existing Saturday and Sunday traffic volumes. The intersections' levels of service for existing plus project conditions are summarized in Table 9. A copy of the analysis worksheets for existing plus project conditions can be found in Appendix D for the typical Sunday weekend Meditation Activity.

As illustrated in Table 9, all key intersections continue to operate at an acceptable LOS C or better ~~during~~ under existing plus project conditions during both Saturday and Sunday conditions.

Table 8 - Existing + Project Roadway Segment Level of Service Summary								
Roadway Segment	Class	LOS D Capacity	Existing		Existing +Typical <del>Sunday</del> <u>Weekend</u> Traffic			
			ADT	LOS	Proj. Traffic	ADT	LOS	Sign?
<u>Saturday Conditions (a)</u>								
<u>State Route 76</u>								
<u>S. Mission Rd. to Olive Hill Rd.</u>	<u>LC</u>	<u>10,900</u>	<u>33,610 (c)</u>	<u>F</u>	<u>45</u>	<u>33,655</u>	<u>F</u>	<u>No</u>
<u>s/o Olive Hill Rd.</u>	<u>LC</u>	<u>10,900</u>	<u>30,420 (c)</u>	<u>F</u>	<u>45</u>	<u>30,465</u>	<u>F</u>	<u>No</u>
<u>Camino Del Rey</u>								
<u>SR-76 to Old River Rd.</u>	<u>LC</u>	<u>10,900</u>	<u>6,034</u>	<u>C</u>	<u>105</u>	<u>6,139</u>	<u>C</u>	<u>No</u>
<u>Old River Rd. to West Lilac Rd.</u>	<u>LC</u>	<u>10,900</u>	<u>6,867</u>	<u>C</u>	<u>120</u>	<u>6,987</u>	<u>C</u>	<u>No</u>
<u>West Lilac Rd. to Villas Drive</u>	<u>TC</u>	<u>13,500</u>	<u>6,867</u>	<u>C</u>	<u>120</u>	<u>6,987</u>	<u>C</u>	<u>No</u>
<u>Villas Drive to Project Access</u>	<u>LC</u>	<u>10,900</u>	<u>3,190</u>	<u>B</u>	<u>120</u>	<u>3,310</u>	<u>B</u>	<u>No</u>
<u>Project Access to Aqueduct Rd.</u>	<u>LC</u>	<u>10,900</u>	<u>3,190</u>	<u>B</u>	<u>180</u>	<u>3,370</u>	<u>B</u>	<u>No</u>
<u>Aqueduct Rd. to Old Hwy. 395</u>	<u>LC</u>	<u>10,900</u>	<u>2,906</u>	<u>B</u>	<u>174</u>	<u>3,080</u>	<u>B</u>	<u>No</u>
<u>Old Highway 395</u>								
<u>Nelson Way to Camino Del Rey</u>	<u>LC</u>	<u>10,900</u>	<u>3,079</u>	<u>B</u>	<u>54</u>	<u>3,133</u>	<u>B</u>	<u>No</u>
<u>Camino Del Rey to Gopher Canyon Rd</u>	<u>LC</u>	<u>10,900</u>	<u>4,896</u>	<u>C</u>	<u>120</u>	<u>5,016</u>	<u>C</u>	<u>No</u>
<u>Project Access (e)</u>								
<u>n/o Camino Del Rey</u>	<u>RC</u>	<u>4,500</u>	<u>0</u>	<u>≤C</u>	<u>300</u>	<u>300</u>	<u>≤C</u>	<u>No</u>
<u>Sunday Conditions (b)</u>								
<u>State Route 76</u>								
<del>n/o S. Mission Rd (a)</del>	<del>LC</del>	<del>10,900</del>	<del>23,226</del>	<del>F</del>	<del>30</del>	<del>23,256</del>	<del>F</del>	<del>No</del>
<u>S. Mission Rd. to Olive Hill Rd (a)</u>	<u>LC</u>	<u>10,900</u>	<u>41,618 (d)</u>	<u>F</u>	<u>45</u>	<u>41,663</u>	<u>F</u>	<u>No</u>
<u>s/o Olive Hill Rd.</u>	<u>LC</u>	<u>10,900</u>	<u>30,864</u>	<u>F</u>	<u>45</u>	<u>30,909</u>	<u>F</u>	<u>No</u>
<u>Camino Del Rey</u>								
<u>SR-76 to Old River Rd.</u>	<u>LC</u>	<u>10,900</u>	<u>6,760</u>	<u>C</u>	<u>105</u>	<u>6,865</u>	<u>C</u>	<u>No</u>
<u>Old River Rd. to <del>Bonsall H.S.</del><u>West Lilac Rd.</u></u>	<u>LC</u>	<u>10,900</u>	<u>6,760</u>	<u>C</u>	<u>120</u>	<u>6,880</u>	<u>C</u>	<u>No</u>
<del>Bonsall H.S. to W. Lilac</del>	<del>LC</del>	<del>10,900</del>	<del>6,760</del>	<del>C</del>	<del>120</del>	<del>6,880</del>	<del>C</del>	<del>No</del>
<del>W. West</del> <u>Lilac Road</u> <del>Rd.</del> to Villas Drive	<u>TC</u>	<u>13,500</u>	<u>5,077</u>	<u>B</u>	<u>120</u>	<u>5,197</u>	<u>B</u>	<u>No</u>
<u>Villas Drive to Project Access</u>	<u>LC</u>	<u>10,900</u>	<u>5,077</u>	<u>C</u>	<u>120</u>	<u>5,197</u>	<u>C</u>	<u>No</u>
<u>Project Access to Aqueduct Rd.</u>	<u>LC</u>	<u>10,900</u>	<u>2,497</u>	<u>B</u>	<u>180</u>	<u>2,677</u>	<u>B</u>	<u>No</u>
<u>Aqueduct Rd. to Old Hwy. 395</u>	<u>LC</u>	<u>10,900</u>	<u>2,497</u>	<u>B</u>	<u>174</u>	<u>2,671</u>	<u>B</u>	<u>No</u>
<u>Old Highway 395</u>								
<u>Nelson Way to Camino Del Rey</u>	<u>LC</u>	<u>10,900</u>	<u>1,923</u>	<u>B</u>	<u>54</u>	<u>1,977</u>	<u>B</u>	<u>No</u>
<u>Camino Del Rey to Gopher Canyon Rd</u>	<u>LC</u>	<u>10,900</u>	<u>3,883</u>	<u>B</u>	<u>120</u>	<u>4,003</u>	<u>B</u>	<u>No</u>
<u>Project Access (be)</u>								
<u>n/o Camino Del Rey</u>	<u>RC</u>	<u>4,500</u>	<u>0</u>	<u>&lt;C</u>	<u>300</u>	<u>300</u>	<u>&lt;C</u>	<u>No</u>
ADT = Average Daily Traffic, LOS = Level of Service; LC = Light Collector; TC = Town Collector; RC = Residential Collector; < C = Operates at LOS C or better; Sign? = Significance based on County of San Diego's PFE and Guidelines for Determining Significance (a) Existing Saturday Counts were collected in October 2011 (b) Existing Sunday Counts were collected in August and October 2009 (c) Due to construction on the SR-76, daily traffic counts could not be collected; therefore, daily volumes were estimated based on peak hour counts at the SR-76- Mission Road/Olive Hill Road-Camino Del Rey intersection (d) Volume is representative of Monday traffic, all other volumes are representative of <u>Saturday and</u> Sunday traffic conditions (be) Levels of service are not typically applied to non-circulation element roads since their primary purpose is to serve abutting lots, not carry through traffic. The capacity shown here is the recommended upper limit to maintain LOS C or better								

Table 9--Existing + Project Intersection Level of Service Summary								
Intersection	Traffic Control	Critical Move	Existing		Existing + Typical Sunday Meditation Activity			
			Delay	LOS	Delay	LOS	Δ-Delay	Sign <sup>2</sup>
AM Peak Hour								
SR-76 Pala Rd (N-S) @ S. Mission Rd (E-W)	Sig.	Int.	9.9	A	9.9	A	0.0	No
SR-76 Pala Rd (N-S) @ Olive Hill Rd (E-W)	Sig.	Int.	18.1	B	18.4	B	0.3	No
W. Camino Del Rey (E-W) @ W. Old River Rd (N-S)	OWSC	NBL	10.2	B	10.4	B	0.2	No
E. Camino Del Rey (E-W) @ E. Old River Rd (N-S)	OWSC	NBL	9.1	A	9.2	A	0.1	No
W. Old River Rd (N-S) @ E. Old River Rd (E-W)	OWSC	WBL	9.0	A	9.1	A	0.1	No
Camino Del Rey (E-W) @ Old Highway 395 (N-S)	OWSC	EB NBL	9.0 7.4	A A	9.1 7.5	A A	0.1 0.1	No
Mid-Day Peak Hour								
SR-76 Pala Rd (N-S) @ S. Mission Rd (E-W)	Sig.	Int.	15.3	B	15.3	B	0.0	No
SR-76 Pala Rd (N-S) @ Olive Hill Rd (E-W)	Sig.	Int.	30.2	C	30.6	C	0.4	No
W. Camino Del Rey (E-W) @ W. Old River Rd (N-S)	OWSC	NBL	12.1	B	12.4	B	0.3	No
E. Camino Del Rey (E-W) @ E. Old River Rd (N-S)	OWSC	NBL	9.8	A	9.8	A	0.0	No
W. Old River Rd (N-S) @ E. Old River Rd (E-W)	OWSC	WBL	10.4	B	10.5	B	0.1	No
Camino Del Rey (E-W) @ Old Highway 395 (N-S)	OWSC	EB NBL	9.5 7.5	A A	10.0 7.5	A A	0.5 0.0	No
PM Peak Hour								
SR-76 Pala Rd (N-S) @ S. Mission Rd (E-W)	Sig.	Int.	11.7	B	11.7	B	0.0	No
SR-76 Pala Rd (N-S) @ Olive Hill Rd (E-W)	Sig.	Int.	22.6	C	22.8	C	0.2	No
W. Camino Del Rey (E-W) @ W. Old River Rd (N-S)	OWSC	NBL	11.9	B	12.0	B	0.1	No
E. Camino Del Rey (E-W) @ E. Old River Rd (N-S)	OWSC	NBL	9.5	A	9.5	A	0.0	No
W. Old River Rd (N-S) @ E. Old River Rd (E-W)	OWSC	WBL	10.0	A	10.0	A	0.0	No
Camino Del Rey (E-W) @ Old Highway 395 (N-S)	OWSC	EB NBL	9.4 7.5	A A	9.5 7.5	A A	0.1 0.0	No
Delay is measured in seconds of delay per vehicle (sec/veh); LOS = Level of Service; E-W = East-West Street; N-S = North-South Street; Int. = Intersection; Sig. = Signalized; OWSC = One-Way Stop-Controlled; EB = Eastbound Approach; WBL = Westbound Left; NBL = Northbound Left; NBR = Northbound Right; Sign <sup>2</sup> = Significance based on County of San Diego's PFE and Guidelines for Determining Significance Δ Delay = Increase (Decrease) in existing delay due to the addition of project traffic								

**Table 9 - Existing + Project Intersection Level of Service Summary**

Intersection	Traffic Control	Critical Move	Saturday Conditions						Sunday Conditions						
			Existing			Existing + Typical Weekend Meditation Activity			Existing			Existing + Typical Weekend Meditation Activity			
			Delay (sec/veh)	LOS		Delay (sec/veh)	LOS	Proj. Trips	Δ Delay	Sign?	Delay (sec/veh)	LOS	Proj. Trips	Δ Delay	Sign?
			AM Peak Hour												
SR-76-Mission Rd. (N-S) @ Olive Hill Rd.-Camino Del Rey (E-W)	Sig.	Int.	19.9	B	20.2	C	19	0.3	No	18.1	B	18.4	19	0.3	No
W. Camino Del Rey (E-W) @ W. Old River Rd. (N-S)	OWSC	NBL	11.0	B	11.2	B	0	0.2	No	10.2	B	10.4	0	0.2	No
E. Camino Del Rey (E-W) @ E. Old River Rd. (N-S)	OWSC	NBR	9.3	A	9.5	A	3	0.2	No	9.1	A	9.2	3	0.1	No
W. Old River Rd. (N-S) @ E. Old River Rd. (E-W)	OWSC	WBL	9.6	A	9.6	A	0	0.0	No	9.0	A	9.0	0	0.0	No
Camino Del Rey (E-W) @ Old Highway 395 (N-S)	OWSC	EB NBL	9.5 7.5	A A	9.6 7.6	A A	3 20	0.1 0.1	No	9.0 7.4	A A	9.0 7.5	3 20	0.0 0.1	No
Mid-Day Peak Hour															
SR-76-Mission Rd. (N-S) @ Olive Hill Rd.-Camino Del Rey (E-W)	Sig.	Int.	29.8	C	30.1	C	28	0.3	No	30.2	C	30.5	28	0.3	No
W. Camino Del Rey (E-W) @ W. Old River Rd. (N-S)	OWSC	NBL	12.2	B	12.5	B	0	0.3	No	12.1	B	12.4	0	0.3	No
E. Camino Del Rey (E-W) @ E. Old River Rd. (N-S)	OWSC	NBR	9.6	A	9.6	A	0	0.0	No	9.8	A	9.8	0	0.0	No
W. Old River Rd. (N-S) @ E. Old River Rd. (E-W)	OWSC	WBL	10.0	A	10.1	B	4	0.1	No	10.4	B	10.4	4	0.0	No
Camino Del Rey (E-W) @ Old Highway 395 (N-S)	OWSC	EB NBL	9.7 7.6	A A	10.2 7.6	B A	44 2	0.5 0.0	No	9.5 7.5	A A	9.9 7.5	44 2	0.4 0.0	No
PM Peak Hour															
SR-76-Mission Rd. (N-S) @ Olive Hill Rd.-Camino Del Rey (E-W)	Sig.	Int.	23.0	C	23.2	C	7	0.2	No	23.7	C	23.9	7	0.2	No
W. Camino Del Rey (E-W) @ W. Old River Rd. (N-S)	OWSC	NBL	11.7	B	11.8	B	0	0.1	No	11.9	B	12.0	0	0.1	No
E. Camino Del Rey (E-W) @ E. Old River Rd. (N-S)	OWSC	NBR	9.6	A	9.6	A	0	0.0	No	9.5	A	9.5	0	0.0	No
W. Old River Rd. (N-S) @ E. Old River Rd. (E-W)	OWSC	WBL	10.0	A	10.0	A	1	0.0	No	10.0	A	10.0	1	0.0	No
Camino Del Rey (E-W) @ Old Highway 395 (N-S)	OWSC	EB NBL	10.0 7.6	A A	10.2 7.6	B A	10 2	0.2 0.0	No	9.4 7.5	A A	9.5 7.5	10 2	0.1 0.0	No
Delay is measured in seconds of delay per vehicle (sec/veh); Δ Delay = Increase (Decrease) Delay due to the addition of the proposed project; LOS = Level of Service; E-W = East-West Street; N-S = North-South Street; Int. = Intersection; Sig. = Signalized; OWSC = One-Way Stop-Controlled; EB = Eastbound Approach; WBL = Westbound Left; NBL = Northbound Left; NBR = Northbound Right;															
Sign? = Significance based on County of San Diego's PFE and Guidelines for Determining Significance															
Proj. Trips = Project Traffic added to the critical movement, see Figure 8															



## SECTION V - PROJECT ACCESS, ON-SITE CIRCULATION, & PARKING REQUIREMENTS

### PROJECT ACCESS

The main access to the project site will be provided by a 24-foot wide paved driveway from Camino Del Rey. Emergency access will be provided from Wrightwood Road at the northerly boundary of the site. This road will provide the North County Fire Protection District with emergency access to the property, and will not be utilized by visitors or guests of the facility. The project access was analyzed under existing plus project conditions assuming it was stop-controlled on the access (southbound) approach. As illustrated in Table 10, the Dai Dang Meditation Center Driveway off Camino Del Rey will operate at an acceptable LOS ~~B or better~~ A under existing plus project conditions on a Saturday and will operate at an acceptable LOS B under existing plus project conditions on a Sunday without the addition of acceleration/deceleration lanes. (A copy of the project access analysis worksheets are provided in Appendix G.)

Table 10 - Project Access Level of Service Summary								
Intersection	Traffic Control	Critical Move	AM Peak Hour		Mid-Day Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS
Existing + Typical Weekend Meditation Activity (Saturday Conditions)								
Camino Del Rey (E-W) @ Dai Dang Project Access (N-S)	OWSC	SB	9.8	A	10.0	A	9.7	A
Existing + Typical SundayWeekend Meditation Activity (Sunday Conditions)								
Camino Del Rey (E-W) @ Dai Dang Project Access (N-S)	OWSC	SB	10.2	B	<del>11.7</del> 11.6	B	<del>10.0</del> 10.1	<del>A</del> B
Delay is measured in seconds of delay per vehicle (sec/veh); LOS = Level of Service; E-W = East-West Street; N-S = North-South Street, OWSC = One-Way Stop-Controlled, SB = Southbound Approach								

### ON-SITE CIRCULATION

The project provides one (1) north-south driveway off Camino Del ~~Mar~~ Rey that provides access to the overflow parking lot located at the southeast corner of the property as well as the main parking lot and existing and proposed building structures located at the northern end of the property. An emergency only access is provided along the northern edge of the property via Wrightwood Road, this access will not be utilized by ~~visitor of~~ visitors or guests of the facility.

The privately contracted buses that enter the facility to drop-off/pick-up guests will access the site via Camino Del Rey; enter the site to travel to the parking area located just south of the proposed meditation hall where there is a designated drop-off area for the buses to drop-off and pick-up the passengers. After dropping-off/picking-up the passengers, the busses will then back up into the north-south drive aisle/parking lane that extends to the north end of the project site and then continue to travel south to exit back onto Camino Del Rey. From there the busses will travel to a near-by park-and-ride lot where they will wait to return and pick up passengers. Figure 11 provides an illustration of the proposed circulation for the buses within the project site. As illustrated in Figure 11, the proposed site plan provides adequate turning radii to accommodate up to a 50 passenger bus.



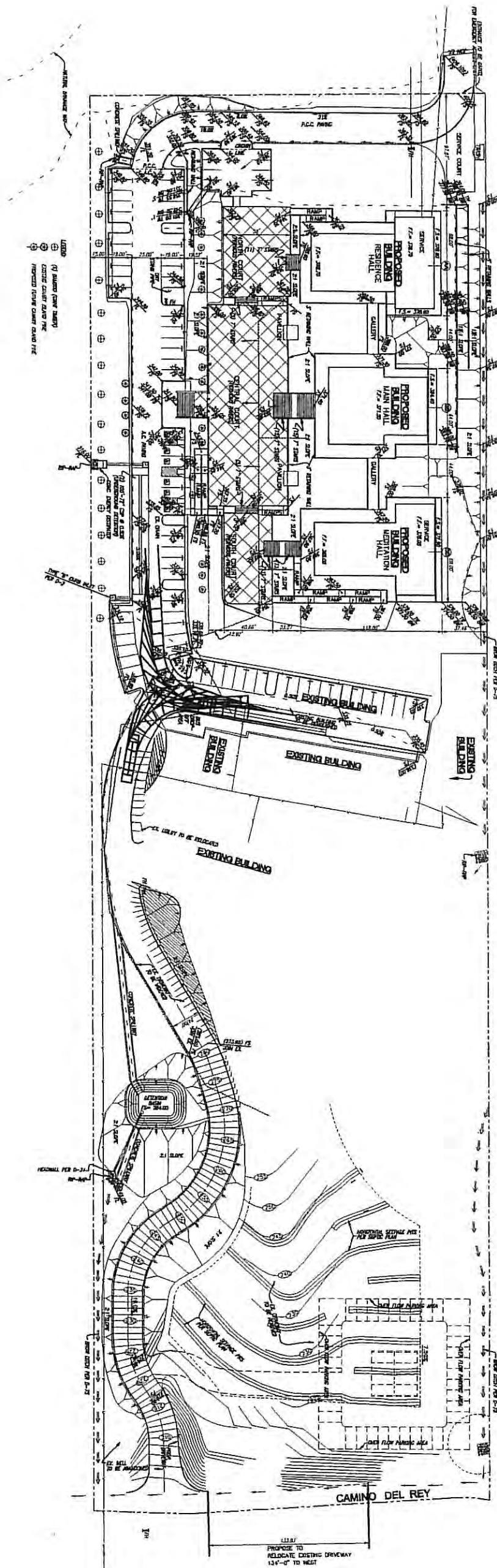


FIGURE 11  
PROPOSED BUS CIRCULATION

As previously mentioned, nearby park-and-ride lots can be utilized as a staging facility for the buses. Thus no buses will be parked on the project site itself. A couple potential park-and-ride lots that could be utilized for the staging of the buses include:

1. Park-and-Ride Lot #19-Pala Road : Located at the northwest corner of Interstate 15 and SR-76 (Pala Road), and
2. Park-and-Ride Lot # 46-Sweetgrass Lane: Located at 4980 Sweetgrass Lane at the Riverview Church.

The Pala Road park-and-ride lot has 163 available parking spaces while the Sweetgrass Lane park-and-ride lot has 50 available parking spaces. More details on the park-and-ride lots are provided in Appendix A.

## **PARKING REQUIREMENTS**

As illustrated in the site plan shown in Figure 3 provided in Section I, the project proposes to construct a parking lot at the northern end of the project site that will accommodate 81 parking spaces. In addition, it plans to provide an overflow parking area located at the southeast corner of the property along Camino Del Rey which will be able to accommodate up to 41 parking spaces. Thus, a total of 122 parking spaces will be available on the project site.

As previously discussed, a review of the average vehicle occupancy data and number of guests that was recorded for the Dai Dang Meditation Center for every Sunday between July 20, 2008 and March 8, 2009 found that over the 54 Sundays worth of data that the vehicle occupancy ranged from a low 1.7 people per car to a high of 2.6 people per car with an average of 2.1 people per car. The number of daily guests ranged from a low of 49 to a high of 303, with an average of 93 guests per day.

If it was assumed that the maximum number of guests that would enter the site utilizing their personal vehicle would be 300, and if the vehicle occupancy rate of 2.5 people per car were utilized the parking demand would be 120 parking spaces (300 people/2.5 people per car = 120 cars = 120 parking spaces). This is 2 parking spaces less than the 122 available on site.

In summary the provision of 122 parking spaces will accommodate the typical 300 person weekend (Saturday and Sunday) events.

To further insure that parking demand will not be exceeded, Dai Dang ~~will implement~~has implemented a reservation system on its website to issue parking permits.

## **PROJECT ACCESS SIGHT DISTANCE**

Per the County of San Diego's Public Road Standards, a minimum corner sight distance of 10 feet per every mile per hour of travel speed is required. Per the Public Road Standards, the speed used to determine the sight distance is the greater of the current prevailing speed or the minimum design speed of the road per its Circulation Element classification. ~~Camino Del Rey is classified as a Rural Collector with bike lanes, which has a design speed of 40 miles per hour (mph). As discussed in D&A's August 17, 2006 Traffic Study for Dai Dang Meditation Center (P04-016), based on speed surveys conducted on September 8, 2005, the current prevailing speed (85<sup>th</sup> percentile speed) on Camino Del Rey is 38 mph for eastbound traffic and 33 mph for westbound traffic. Thus, the design speed of 40 mph will be utilized to determine the minimum corner sight distance requirements. Based on a design speed of 40mph, the minimum corner sight distance requirement is 400 feet (i.e. 40 mph X 10 feet/mph = 400 feet). Camino Del Rey along the project's frontage is classified as a 2.2C Light Collector with bike lanes, which has a design speed of 40 miles per hour (mph). Based on speed surveys conducted on June 16, 2011, the current prevailing speed (85<sup>th</sup> percentile speed) on Camino Del Rey approaching the project's driveway is 34 mph for eastbound traffic and 55.5 mph for westbound traffic. Thus, based on the County's Public Road Standards, the corner sight distance for eastbound traffic (looking west of the driveway) should be~~

based on the design speed of the road (40 mph) while the corner sight distance for westbound traffic (looking east of the driveway) should be based on the prevailing speed of the road (55.5 mph). However, due to the presence of a nearby curve the utilization of the design speed of the road for eastbound traffic (looking west of the driveway) would push the line of sight beyond the existing right-of-way. To eliminate this issue the County approved a design exception which allowed the Corner sight distance for eastbound traffic (looking west of the driveway) to be based on the prevailing speed of 34 mph.

D&A's August 17, 2006 *Traffic Study for Dai Dang Meditation Center (P04-016)* evaluated the adequacy of sight distance at the existing project driveway off Camino Del Rey and found that there was inadequate corner sight distance. As discussed in D&A's August 17, 2006 Traffic Study, as part of the proposed project; however, the existing driveway will be relocated approximately 134 feet to the west of its existing location, the site plan illustrated in Figure 3 provided in Section I shows the location of the relocated driveway. The relocation of the driveway will increase the available sight distance ~~enough.~~ The following discussion relates to ~~meet the minimum corner sight distance requirements.~~ at the proposed new project driveway.

~~Upon grading of the site, the applicant's engineer will need to certify that a minimum of 400 feet of corner sight distance is provided west and east of the new driveway location.~~

Field investigations conducted by Spear & Associates, Inc. confirmed that there would be in excess of 555' feet of sight distance looking to the west of the proposed driveway (looking at eastbound traffic) from a distance of 10 feet (10') back from the edge of the travel way. The line of sight; however, would pass over the neighboring parcel's southeast corner (a private property) which would dictate that a clear space easement be granted on this private property. A request to obtain the clear space easement across the neighbor's parcel was submitted, but to date no response has been received. Since the clear space easement could not be guaranteed, the County approved a Design Exception Request which allowed the line of sight to be measured a distance of eight feet (8') back from the edge of the travel way (or six feet [6'] back from the edge of the pavement) rather than the standard ten feet (10'). Further, the County allowed the utilization of the American Association of State Highway and Transportation Officials (AASHTO) stopping sight distance criteria to determine the required sight distance, which reduced the required sight distance from 555 feet (555') to 412 feet (412'). (A copy of the approved Design Exception Request to a Road Standard and/or Modification to Project Conditions for the proposed project (MUP 04-016) is provided in Appendix B.) Spear & Associates, Inc. was able to certify that , physically there will be a minimum of 412 feet (412') of unobstructed braking sight distance looking westerly (looking at eastbound traffic) from the future driveway along Camino Del Rey with the point of observation being 6.0 feet (6.0') from the edge of pavement (or 8.0' from the edge of travel way). The line of sight will fall within the streets right-of way and a clear space easement would not be required.

Spear & Associates, Inc. was also able to certify that physically there will be a minimum of 340 feet of unobstructed sight distance looking easterly (looking at westbound traffic) from the future driveway along Camino Del Rey for the prevailing speed of traffic (34 mph), per the design standards of Section 6.1 Table 5 of the County Public Road Standards (Approved March 3, 2010). The line of sight will fall within the streets right-of way as said right-of-way will exist upon dedication per the project conditions.

## SECTION VI - PROJECT MITIGATION

### DIRECT IMPACTS

- The project does not have a significant direct impact on any of the key roadway segments or intersections analyzed.

### CUMULATIVE IMPACTS

- As discussed in D&A's August 17, 2006 *Traffic Study for Dai Dang Meditation Center (P04-016)*, as mitigation for its potential cumulative impacts, the applicant has agreed to pay the County of San Diego Traffic Impact Fee (TIF).

### ~~FRONTAGE IMPROVEMENTS~~ RIGHT-OF-WAY DEDICATION

- The applicant will be required to ~~improve Camino Del Rey~~ dedicate right-of-way along the project's frontage along Camino Del Rey in accordance with the County of San Diego's centerline ordinance. Since the proposed project does not have any significant direct impacts, no improvements to Camino Del Rey along the project's frontage will be required.

### ON-SITE PARKING

- To insure parking demand will not exceed the available on-site parking the applicant ~~will implement~~ has implemented a parking reservation system using its website.

## SECTION VII - SUMMARY OF FINDINGS AND CONCLUSIONS

- The proposed project is an application for a Major Use Permit to allow for construction of facilities to support a Buddhist meditation center and monastery, the Dai Dang Meditation Center, totaling approximately 22,796 square feet (SF) at 6326 Camino Del Rey in the Bonsall Community of San Diego County.
- On the typical weekend (Saturday and Sunday) service the facility will be open to visitors who come to the facility for worship, meditation, a silent communal lunch, and a question and answer period with the headmaster. The normal weekend (Saturday and Sunday) meditation activity ~~generally attracts~~is planned to accommodate up to 300 people. ~~These~~The typical ~~Sunday weekend~~ services will occur approximately 52 ~~times~~weekends per year.
- Based on a projected attendance of up to 300 guests, the proposed project will generate 300 average daily trips, 54 AM peak hour trips, 78 mid-day peak hour trips, and 21 PM peak hour trips during the typical weekend (Saturday and Sunday) service meditation activity.
- The proposed project does not have a significant direct impact on any key roadway segments or intersections analyzed.
- Based on a vehicle occupancy rate of 2.5 people per car there would be a parking demand of 120 parking spaces (300 people/2.5 people per car = 120 cars = 120 parking spaces). This is 2 parking spaces less than the 122 available on site.
- On-site circulation and project access were reviewed and found to adequately accommodate project traffic, see Section V for specific details.
- As mitigation for its potential cumulative impacts, the applicant has agreed to pay the County of San Diego Traffic Impact Fee (TIF).
- The applicant will be required to ~~improve Camino Del Rey~~dedicate right-of-way along the project's frontage along Camino Del Rey in accordance with the County of San Diego's centerline ordinance.
- To insure parking demand will not exceed the available on-site parking the applicant ~~will implement~~has implemented a parking reservation system using its website.

## **APPENDIX A**

- 24-Hour Machine Counts
- AM/Mid/PM Peak Hour Turn Counts
- County of San Diego Level of Service Thresholds
- San Diego County *Guidelines for Determining Significance*
  - Excerpts from the Public Facility Element
    - SANDAG Trip Generation Rates
  - List of County of San Diego Holidays
  - Information on Park-and-Ride Lots

## 24-Hour Machine Counts



-2009 Counts

Volumes for: Monday, August 31, 2009

City: Bonsall

Location: SR-76 n/o S Mission Rd

Project 09-4326-003

DAILY TOTALS				
NB	SB	EB	WB	Total
0	0	11,500	11,726	23,226

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			24	19	12:00			144	135
00:15			24	20	12:15			177	149
00:30			27	35	12:30			152	155
00:45			21	96	12:45			149	622
01:00			16	29	13:00			166	142
01:15			12	21	13:15			154	158
01:30			13	16	13:30			157	165
01:45			9	50	13:45			156	633
02:00			10	26	14:00			148	160
02:15			15	18	14:15			212	179
02:30			13	16	14:30			209	193
02:45			11	49	14:45			247	816
03:00			7	23	15:00			232	135
03:15			9	25	15:15			251	165
03:30			17	32	15:30			256	176
03:45			18	51	15:45			247	986
04:00			23	37	16:00			266	151
04:15			28	48	16:15			249	178
04:30			36	67	16:30			236	164
04:45			39	126	16:45			250	1001
05:00			50	133	17:00			278	174
05:15			53	131	17:15			247	166
05:30			63	215	17:30			255	145
05:45			86	252	17:45			238	1018
06:00			95	276	18:00			251	125
06:15			109	252	18:15			198	111
06:30			114	236	18:30			159	107
06:45			120	438	18:45			153	761
07:00			132	256	19:00			142	118
07:15			161	233	19:15			130	110
07:30			177	261	19:30			152	95
07:45			181	651	19:45			120	544
08:00			194	219	20:00			106	91
08:15			159	269	20:15			109	70
08:30			147	198	20:30			107	76
08:45			136	636	20:45			84	406
09:00			142	193	21:00			76	65
09:15			149	152	21:15			64	66
09:30			125	178	21:30			75	72
09:45			139	555	21:45			82	297
10:00			135	157	22:00			68	52
10:15			150	151	22:15			54	45
10:30			141	160	22:30			53	51
10:45			140	566	22:45			49	224
11:00			158	160	23:00			44	35
11:15			140	153	23:15			52	33
11:30			135	166	23:30			39	26
11:45			125	558	23:45			29	164

Total Vol.		4028	6140	10168					7472	5586	13058		
					Daily Totals :	NB		SB		EB		WB	Total
						0		0		11,500		11,726	23,226
Split %	AM				PM								
		39.6%	60.4%	43.8%	57.2% 42.8% 56.2%								
AM					PM								
Peak Hr.	07:15 06:00 07:30				Peak Hr. 16:45 14:00 15:30								
Volume	713 1017 1660				Volume 1030 709 1697								
P.H.F.	0.919 0.921 0.947				P.H.F. 0.926 0.918 0.982								
7 - 9 Vol.	0	0	1287	1815 3102	4 - 6 Vol.	0	0	2019	1303	3322			
Peak Hr.	07:15 07:00 07:30				Peak Hr. 16:45 16:15 16:15								
Volume	0	0	713	950 1660	Volume 1030 684 1697								
P.H.F.	0.000	0.000	0.919	0.910 0.947	P.H.F. 0.000 0.000 0.926 0.961 0.939								

Volumes for: Monday, August 31, 2009

City: Bonsall

Location: SR-76 n/o Olive Hill Dr

Project 09-4326-002

DAILY TOTALS					
NB	SB	EB	WB	Total	
0	0	22,593	19,025	41,618	

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			41	24	12:00			264	229
00:15			54	27	12:15			320	256
00:30			49	37	12:30			304	240
00:45			41	185	12:45			312	1200
01:00			27	30	13:00			320	251
01:15			23	25	13:15			317	267
01:30			23	19	13:30			301	276
01:45			17	90	13:45			326	1264
02:00			22	29	14:00			306	266
02:15			21	19	14:15			366	299
02:30			17	15	14:30			401	290
02:45			14	74	14:45			474	1547
03:00			16	30	15:00			410	296
03:15			14	34	15:15			469	275
03:30			25	37	15:30			462	322
03:45			42	97	15:45			460	1801
04:00			32	48	16:00			466	252
04:15			43	80	16:15			489	281
04:30			66	108	16:30			482	269
04:45			43	184	16:45			521	1958
05:00			77	185	17:00			492	284
05:15			74	234	17:15			474	293
05:30			102	305	17:30			480	227
05:45			161	414	17:45			484	1930
06:00			133	405	18:00			444	191
06:15			190	382	18:15			439	223
06:30			258	407	18:30			409	187
06:45			263	844	18:45			348	1640
07:00			314	436	19:00			326	182
07:15			301	399	19:15			270	181
07:30			314	429	19:30			317	160
07:45			339	1268	19:45			276	1189
08:00			366	399	20:00			220	146
08:15			305	429	20:15			256	108
08:30			274	355	20:30			222	119
08:45			253	1198	20:45			207	905
09:00			265	283	21:00			201	95
09:15			270	255	21:15			171	111
09:30			249	295	21:30			160	96
09:45			275	1059	21:45			176	708
10:00			293	241	22:00			147	78
10:15			293	261	22:15			130	70
10:30			278	291	22:30			110	49
10:45			282	1146	22:45			108	495
11:00			297	248	23:00			92	41
11:15			254	255	23:15			87	43
11:30			258	266	23:30			71	31
11:45			281	1090	23:45			57	307

Total Vol.		7649	9832	17481	14944				9193	24137			
						NB		SB		EB		WB	Total
					Daily Totals :		0		0		22,593		19,025
Split %	AM				PM								
	43.8%	56.2%	42.0%		61.9%				38.1%		58.0%		
AM					PM								
Peak Hr.	07:30	06:45	07:30	Peak Hr.				16:15		15:00	16:15		
Volume	1324	1658	2952	Volume				1984		1212	3111		
P.H.F.	0.904	0.951	0.965	P.H.F.				0.952		0.941	0.955		
7 - 9 Vol.	0	0	2466	3124	5590	4 - 6 Vol.	0	0	3888	2149	6037		
Peak Hr.			07:30	07:00	07:30	Peak Hr.			16:15	16:30	16:15		
Volume	0	0	1324	1635	2952	Volume	0	0	1984	1139	3111		
P.H.F.	0.000	0.000	0.904	0.938	0.965	P.H.F.	0.000	0.000	0.952	0.972	0.955		



Volumes for: Sunday, August 30, 2009

City: Bonsall

DAILY TOTALS					
NB	SB	EB	WB	Total	
15,604	15,260	0	0	30,864	

Location: SR-76 S/o Olive Hill Dr

Project 09-4326-001

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00	63	81			12:00	252	295		
00:15	80	72			12:15	246	298		
00:30	57	43			12:30	297	306		
00:45	55	255	56	252	12:45	260	1055	277	1176
									2231
01:00	38	42			13:00	285	292		
01:15	49	58			13:15	268	291		
01:30	49	43			13:30	282	258		
01:45	49	185	59	202	13:45	264	1099	287	1128
									2227
02:00	36	44			14:00	226	279		
02:15	26	43			14:15	259	228		
02:30	31	46			14:30	291	248		
02:45	27	120	42	175	14:45	264	1040	248	1003
									2043
03:00	23	31			15:00	287	257		
03:15	22	23			15:15	299	256		
03:30	17	36			15:30	307	208		
03:45	8	70	30	120	15:45	276	1169	238	959
									2128
04:00	18	24			16:00	268	214		
04:15	13	30			16:15	321	256		
04:30	23	43			16:30	317	249		
04:45	15	69	38	135	16:45	319	1225	235	954
									2179
05:00	15	46			17:00	320	195		
05:15	29	41			17:15	294	233		
05:30	29	60			17:30	283	219		
05:45	36	109	63	210	17:45	288	1185	208	855
									2040
06:00	33	67			18:00	318	202		
06:15	61	88			18:15	268	188		
06:30	68	78			18:30	280	174		
06:45	60	222	93	326	18:45	290	1156	172	736
									1892
07:00	70	88			19:00	254	203		
07:15	96	121			19:15	268	198		
07:30	108	132			19:30	252	221		
07:45	125	399	162	503	19:45	292	1066	166	788
									1854
08:00	98	155			20:00	236	177		
08:15	150	191			20:15	298	172		
08:30	138	166			20:30	209	175		
08:45	165	551	187	699	20:45	201	944	144	668
									1612
09:00	147	215			21:00	191	132		
09:15	181	234			21:15	158	130		
09:30	176	259			21:30	149	119		
09:45	197	701	258	966	21:45	140	638	100	481
									1119
10:00	156	269			22:00	120	106		
10:15	231	258			22:15	98	116		
10:30	229	315			22:30	69	83		
10:45	229	845	285	1127	22:45	71	358	71	376
									734
11:00	195	299			23:00	71	58		
11:15	217	322			23:15	81	52		
11:30	231	303			23:30	44	50		
11:45	255	898	279	1203	23:45	49	245	58	218
									463
<b>Total Vol.</b>	<b>4424</b>	<b>5918</b>		<b>10342</b>		<b>11180</b>	<b>9342</b>		<b>20522</b>

Daily Totals :	NB	SB	EB	WB	Total
	15,604	15,260	0	0	30,864

AM					PM				
Split %	42.8%	57.2%		33.5%	54.5%	45.5%			66.5%
<b>AM</b>					<b>PM</b>				
Peak Hr.	11:45	10:30		11:45	Peak Hr.	16:15	12:00		12:30
Volume	1050	1221		2228	Volume	1277	1176		2276
P.H.F.	0.884	0.948		0.924	P.H.F.	0.995	0.961		0.944
<b>7 - 9 Vol.</b>	<b>950</b>	<b>1202</b>	<b>0</b>	<b>2152</b>	<b>4 - 6 Vol.</b>	<b>2410</b>	<b>1809</b>	<b>0</b>	<b>4219</b>
Peak Hr.	08:00	08:00		08:00	Peak Hr.	16:15	16:00		16:15
Volume	551	699		1250	Volume	1277	954		2212
P.H.F.	0.835	0.915	0.000	0.888	P.H.F.	0.995	0.932	0.000	0.958

Volumes for: Sunday, August 30, 2009

City: Bonsall

Location: Camino Del Rey btwn SR-76 &amp; Old River Rd

Project 09-4326-004

DAILY TOTALS					
NB	SB	EB	WB	Total	
0	0	3,794	2,966	6,760	

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			12	5	12:00			91	57
00:15			17	9	12:15			96	48
00:30			8	4	12:30			98	58
00:45			5	42	12:45			86	371
01:00			7	7	13:00			89	50
01:15			8	2	13:15			97	47
01:30			5	5	13:30			68	53
01:45			11	31	13:45			74	328
02:00			4	5	14:00			59	55
02:15			3	4	14:15			53	44
02:30			3	3	14:30			45	40
02:45			3	13	14:45			44	201
03:00			1	1	15:00			61	68
03:15			4	3	15:15			65	55
03:30			3	0	15:30			44	47
03:45			6	14	15:45			53	223
04:00			3	4	16:00			49	53
04:15			5	3	16:15			44	47
04:30			10	3	16:30			38	53
04:45			5	23	16:45			69	200
05:00			6	5	17:00			53	54
05:15			15	3	17:15			55	46
05:30			17	6	17:30			62	52
05:45			28	66	17:45			57	227
06:00			21	8	18:00			40	50
06:15			30	11	18:15			54	52
06:30			33	17	18:30			42	53
06:45			52	136	18:45			54	190
07:00			33	19	19:00			53	38
07:15			25	20	19:15			51	43
07:30			26	31	19:30			53	44
07:45			31	115	19:45			60	217
08:00			32	39	20:00			44	48
08:15			37	37	20:15			58	53
08:30			47	44	20:30			59	26
08:45			40	156	20:45			34	195
09:00			53	46	21:00			28	18
09:15			53	40	21:15			34	22
09:30			62	52	21:30			36	27
09:45			50	218	21:45			21	119
10:00			77	78	22:00			13	12
10:15			68	75	22:15			16	14
10:30			79	51	22:30			19	6
10:45			84	308	22:45			16	64
11:00			54	60	23:00			11	8
11:15			58	65	23:15			9	7
11:30			95	48	23:30			6	4
11:45			96	303	23:45			8	34

Total Vol.	1425	1084	2509	2369	1882	4251
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Daily Totals :				NB	SB	EB	WB	Total
				0	0	3,794	2,966	6,760
AM				PM				
Split %	56.8%	43.2%	37.1%	55.7% 44.3% 62.9%				
AM Peak Hr.	11:45	10:00	11:45	PM Peak Hr.	12:00	14:45	12:00	
AM Volume	381	268	588	PM Volume	371	229	581	
AM P.H.F.	0.972	0.859	0.942	PM P.H.F.	0.946	0.842	0.931	
7 - 9 Vol.	0	0	271	4 - 6 Vol.	0	0	427	841
Peak Hr.	08:00	08:00	08:00	Peak Hr.	16:45	16:15	16:45	
Volume	156	158	314	Volume	239	211	448	
P.H.F.	0.000	0.000	0.830	P.H.F.	0.000	0.000	0.866	0.925



Volumes for: Sunday, August 30, 2009

City: Bonsall

Location: Camino Del Rey btwn West Lilac Rd & Villas Dr  
Project 09-4326-005

DAILY TOTALS				
NB	SB	EB	WB	Total
0	0	2,450	2,627	5,077

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			11	4	12:00			49	49
00:15			12	7	12:15			50	68
00:30			4	7	12:30			60	54
00:45			4	31	12:45			45	204
01:00			3	3	13:00			44	49
01:15			9	1	13:15			38	61
01:30			5	5	13:30			41	47
01:45			8	25	13:45			44	167
02:00			4	5	14:00			41	42
02:15			4	3	14:15			45	34
02:30			3	1	14:30			34	29
02:45			1	12	14:45			30	150
03:00			1	1	15:00			42	69
03:15			2	1	15:15			55	47
03:30			3	1	15:30			47	42
03:45			5	11	15:45			35	179
04:00			3	3	16:00			44	50
04:15			4	6	16:15			44	43
04:30			7	1	16:30			38	61
04:45			4	18	16:45			39	165
05:00			4	6	17:00			52	45
05:15			4	4	17:15			48	42
05:30			6	4	17:30			47	40
05:45			11	25	17:45			43	190
06:00			8	4	18:00			28	41
06:15			9	7	18:15			33	39
06:30			11	12	18:30			30	41
06:45			20	48	18:45			40	131
07:00			15	14	19:00			37	28
07:15			21	16	19:15			33	23
07:30			19	31	19:30			33	35
07:45			18	73	19:45			45	148
08:00			19	40	20:00			35	36
08:15			28	43	20:15			30	28
08:30			25	51	20:30			34	25
08:45			30	102	20:45			33	132
09:00			32	53	21:00			26	18
09:15			34	40	21:15			25	14
09:30			34	39	21:30			27	18
09:45			29	129	21:45			14	92
10:00			41	62	22:00			8	10
10:15			44	56	22:15			9	11
10:30			41	56	22:30			14	4
10:45			52	178	22:45			10	41
11:00			40	57	23:00			8	6
11:15			33	53	23:15			7	5
11:30			46	41	23:30			6	2
11:45			54	173	23:45			5	26

<b>Total Vol.</b>		825	1016	1841	1625	1611	3236
		<b>AM</b>			<b>PM</b>		
		44.8%	55.2%	36.3%	50.2%	49.8%	63.7%
		213	246	430	204	210	414
		0.888	0.854	0.911	0.850	0.772	0.877
		0.000	0.000	0.000	0.000	0.000	0.000
		0.850	0.824	0.888	0.913	0.787	0.917

Volumes for: Sunday, October 11, 2009

City: Escondido

Location: Camino del Rey between Aqueduct Rd &amp; Old Hwy 395 Project 09-4363-003

Daily Totals				
NB	SB	EB	WB	Total
0	0	1,209	1,288	2,497

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			2	3	12:00			28	19
00:15			4	2	12:15			22	25
00:30			2	2	12:30			38	26
00:45			2	10	12:45			31	119
01:00			1	4	13:00			22	31
01:15			1	3	13:15			27	25
01:30			0	3	13:30			19	18
01:45			2	4	13:45			16	84
02:00			3	4	14:00			25	27
02:15			0	2	14:15			22	32
02:30			1	3	14:30			25	29
02:45			0	4	14:45			18	90
03:00			2	2	15:00			24	29
03:15			0	2	15:15			21	28
03:30			2	1	15:30			16	21
03:45			1	5	15:45			22	83
04:00			1	2	16:00			12	23
04:15			4	1	16:15			19	21
04:30			1	2	16:30			14	29
04:45			1	7	16:45			27	72
05:00			1	3	17:00			15	23
05:15			4	3	17:15			16	22
05:30			5	6	17:30			26	23
05:45			2	12	17:45			12	69
06:00			4	3	18:00			13	19
06:15			4	7	18:15			18	22
06:30			6	3	18:30			12	23
06:45			3	17	18:45			19	62
07:00			3	5	19:00			10	16
07:15			16	12	19:15			7	11
07:30			10	9	19:30			10	18
07:45			8	37	19:45			5	32
08:00			17	7	20:00			11	5
08:15			14	14	20:15			14	12
08:30			21	24	20:30			8	7
08:45			30	82	20:45			6	39
09:00			30	20	21:00			11	13
09:15			14	19	21:15			10	6
09:30			33	10	21:30			8	11
09:45			21	98	21:45			5	34
10:00			32	13	22:00			4	10
10:15			22	16	22:15			4	4
10:30			22	15	22:30			3	7
10:45			31	107	22:45			2	13
11:00			29	12	23:00			1	6
11:15			26	24	23:15			3	9
11:30			33	17	23:30			4	4
11:45			33	121	23:45			0	8

Total Vol.	504	394	898	705	894	1599
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				Daily Totals :			
				NB	SB	EB	WB
				0	0	1,209	1,288
				Total			
				2,497			
Split %				PM			
				44.1%			
AM				55.9%			
Peak Hr.				12:30			
Volume				229			
P.H.F.				0.895			
7 - 9 Vol.				338			
Peak Hr.				16:45			
Volume				179			
P.H.F.				0.829			



Volumes for: Sunday, October 11, 2009

City: Escondido

Location: Old Hwy 395 between Nelson Way &amp; Camino del Rey

Project 09-4363-001

Daily Totals				
NB	SB	EB	WB	Total
966	957	0	0	1,923

AM Period	NB	SB	EB	WB		PM Period	NB	SB	EB	WB	
00:00	2	1				12:00	22	20			
00:15	1	2				12:15	21	32			
00:30	1	3				12:30	16	21			
00:45	1	5	1	7	12	12:45	26	85	18	91	176
01:00	1	2				13:00	18	25			
01:15	0	1				13:15	17	26			
01:30	1	1				13:30	17	21			
01:45	0	2	0	4	6	13:45	28	80	20	92	172
02:00	1	3				14:00	18	24			
02:15	0	1				14:15	18	23			
02:30	0	3				14:30	16	19			
02:45	2	3	1	8	11	14:45	20	72	16	82	154
03:00	1	0				15:00	23	11			
03:15	0	0				15:15	17	21			
03:30	0	0				15:30	27	20			
03:45	0	1	1	1	2	15:45	33	100	16	68	168
04:00	0	0				16:00	19	21			
04:15	0	0				16:15	19	16			
04:30	0	0				16:30	17	21			
04:45	3	3	1	1	4	16:45	28	83	15	73	156
05:00	2	0				17:00	21	23			
05:15	1	3				17:15	21	11			
05:30	0	1				17:30	22	11			
05:45	4	7	1	5	12	17:45	14	78	14	59	137
06:00	3	3				18:00	20	15			
06:15	3	4				18:15	15	18			
06:30	3	4				18:30	9	15			
06:45	1	10	3	14	24	18:45	18	62	15	63	125
07:00	3	8				19:00	4	16			
07:15	9	14				19:15	9	10			
07:30	3	11				19:30	8	8			
07:45	8	23	7	40	63	19:45	10	31	6	40	71
08:00	13	7				20:00	6	3			
08:15	10	12				20:15	1	4			
08:30	12	10				20:30	4	11			
08:45	7	42	11	40	82	20:45	5	16	8	26	42
09:00	5	7				21:00	10	2			
09:15	18	25				21:15	4	8			
09:30	14	9				21:30	11	8			
09:45	19	56	16	57	113	21:45	4	29	7	25	54
10:00	19	17				22:00	3	5			
10:15	17	15				22:15	2	2			
10:30	20	20				22:30	3	2			
10:45	25	81	17	69	150	22:45	4	12	1	10	22
11:00	20	12				23:00	2	3			
11:15	15	20				23:15	0	2			
11:30	25	20				23:30	2	4			
11:45	21	81	20	72	153	23:45	0	4	1	10	14

Total Vol.	314	318	632	652	639	1291			
				Daily Totals :	NB	SB	EB	WB	Total
				966	957	0	0	1,923	
AM				PM					
Split %	49.7%	50.3%	32.9%	50.5%		49.5%		67.1%	
AM				PM					
Peak Hr.	11:30	11:45	11:30	Peak Hr.	15:00	12:15	12:15		
Volume	89	93	181	Volume	100	96	177		
P.H.F.	0.890	0.727	0.854	P.H.F.	0.758	0.750	0.835		
7 - 9 Vol.	65	80	145	4 - 6 Vol.	161	132			293
Peak Hr.	07:45	07:00	08:00	Peak Hr.	16:45	16:15	16:15		
Volume	43	40	82	Volume	92	75			160
P.H.F.	0.827	0.714	0.932	P.H.F.	0.821	0.815			0.909

Volumes for: Sunday, October 11, 2009

City: Escondido

Location: Old Hwy 395 between Camino del Rey &amp; Gopher Canyon Rd Project 09-4363-002

Daily Totals				
NB	SB	EB	WB	Total
1,991	1,892	0	0	3,883

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00	4	1			12:00	40	52		
00:15	3	7			12:15	38	51		
00:30	3	5			12:30	39	48		
00:45	8	18	2	15	12:45	44	161	44	195
01:00	4	4			13:00	42	40		
01:15	6	3			13:15	38	48		
01:30	2	0			13:30	33	38		
01:45	4	16	2	9	13:45	50	163	33	159
02:00	2	4			14:00	34	43		
02:15	3	1			14:15	44	42		
02:30	2	4			14:30	33	35		
02:45	2	9	1	10	14:45	50	161	26	146
03:00	2	1			15:00	46	31		
03:15	2	0			15:15	43	38		
03:30	1	2			15:30	41	30		
03:45	1	6	2	5	15:45	60	190	34	133
04:00	2	1			16:00	40	29		
04:15	1	3			16:15	38	32		
04:30	3	2			16:30	37	29		
04:45	4	10	2	8	16:45	48	163	36	126
05:00	5	1			17:00	40	34		
05:15	2	4			17:15	36	24		
05:30	7	6			17:30	36	30		
05:45	9	23	4	15	17:45	36	148	19	107
06:00	4	5			18:00	35	28		
06:15	8	8			18:15	35	32		
06:30	6	9			18:30	26	26		
06:45	9	27	7	29	18:45	32	128	28	114
07:00	6	9			19:00	20	27		
07:15	17	28			19:15	15	14		
07:30	13	17			19:30	25	16		
07:45	24	60	13	67	19:45	29	89	8	65
08:00	15	16			20:00	9	12		
08:15	24	27			20:15	9	15		
08:30	31	25			20:30	10	17		
08:45	25	95	28	96	20:45	13	41	11	55
09:00	28	37			21:00	17	11		
09:15	36	36			21:15	9	11		
09:30	20	36			21:30	18	18		
09:45	28	112	26	135	21:45	9	53	11	51
10:00	30	45			22:00	12	9		
10:15	32	30			22:15	6	6		
10:30	27	33			22:30	11	4		
10:45	39	128	40	148	22:45	6	35	2	21
11:00	28	39			23:00	8	3		
11:15	36	38			23:15	8	4		
11:30	36	51			23:30	3	5		
11:45	34	134	41	169	23:45	2	21	2	14

Total Vol.	638	706	1344		1353	1186	2539						
						NB		SB		EB		WB	Total
					Daily Totals :		1,991		1,892		0		0
Split %	AM				PM								
	47.5%	52.5%	34.6%		53.3%			46.7%			65.4%		
AM					PM								
Peak Hr.	11:45	11:30	11:30		Peak Hr.	15:00	12:00						12:00
Volume	151	195	343		Volume	190	195						356
P.H.F.	0.944	0.938	0.932		P.H.F.	0.792	0.938						0.967
7 - 9 Vol.	155	163	0	0	318	4 - 6 Vol.	311	233	0	0	544		
Peak Hr.	08:00	08:00	08:00		08:00	Peak Hr.	16:00	16:15					16:15
Volume	95	96	0	0	191	Volume	163	131	0	0	294		
P.H.F.	0.766	0.857	0.000	0.000	0.853	P.H.F.	0.849	0.910	0.000	0.000	0.875		

-2011 Counts

**Average Daily Traffic Volumes**  
Prepared by: Field Data Services of Arizona, Inc.

SATURDAY, OCTOBER 1 2011

CITY: BONSALL

PROJECT: CA11-0930-1822-001

CAMINO DEL REY BTN SR-76 & OLD RIVER

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB	
00:00			5	4	12:00			58	68	
00:15			4	5	12:15			80	77	
00:30			7	5	12:30			71	50	
00:45			8	24	12:45			54	263	
				5				58	253	
				19					516	
				43						
01:00			4	2	13:00			50	70	
01:15			2	6	13:15			44	62	
01:30			4	5	13:30			41	50	
01:45			2	12	13:45			58	193	
				5				58	240	
				18					433	
				30						
02:00			1	4	14:00			51	51	
02:15			1	5	14:15			68	40	
02:30			2	2	14:30			44	58	
02:45			0	4	14:45			58	221	
				2				56	205	
				13					426	
				17						
03:00			1	1	15:00			62	60	
03:15			2	0	15:15			50	66	
03:30			1	1	15:30			44	74	
03:45			2	6	15:45			59	215	
				0				80	280	
				2					495	
				8						
04:00			4	2	16:00			62	77	
04:15			4	4	16:15			66	61	
04:30			5	5	16:30			68	50	
04:45			9	22	16:45			55	251	
				7				58	246	
				18					497	
				40						
05:00			7	5	17:00			50	50	
05:15			6	9	17:15			51	44	
05:30			11	10	17:30			42	41	
05:45			15	39	17:45			48	191	
				8				48	183	
				32					374	
				71						
06:00			10	16	18:00			41	44	
06:15			12	21	18:15			35	46	
06:30			17	20	18:30			33	35	
06:45			19	58	18:45			42	151	
				28				31	156	
				85					307	
				143						
07:00			30	32	19:00			40	28	
07:15			35	48	19:15			36	22	
07:30			51	42	19:30			31	29	
07:45			47	163	19:45			28	135	
				33				33	112	
				155					247	
				318						
08:00			66	31	20:00			23	18	
08:15			40	58	20:15			21	22	
08:30			41	51	20:30			22	20	
08:45			38	185	20:45			18	84	
				42				19	79	
				182					163	
				367						
09:00			51	58	21:00			21	10	
09:15			62	62	21:15			11	9	
09:30			60	42	21:30			18	7	
09:45			51	224	21:45			17	67	
				54				5	31	
				216					98	
				440						
10:00			54	40	22:00			10	2	
10:15			50	51	22:15			18	3	
10:30			62	48	22:30			11	10	
10:45			60	226	22:45			9	48	
				42				9	24	
				181					72	
				407						
11:00			68	30	23:00			12	7	
11:15			77	55	23:15			7	5	
11:30			78	62	23:30			8	5	
11:45			51	274	23:45			5	32	
				48				4	21	
				195					53	
				469						
Total Vol.			1237	1116	2353	1851			1830	3681



# Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

SATURDAY, OCTOBER 1 2011

CITY: BONSALL

PROJECT: CA11-0930-1822-002

CAMINO DEL REY BTN OLD RIVER & W LILAC

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			13	24	12:00			56	73
00:15			12	13	12:15			64	44
00:30			5	6	12:30			52	57
00:45			13	43	12:45			69	241
				6				59	233
				49					474
				92					
01:00			7	5	13:00			60	69
01:15			9	7	13:15			63	41
01:30			4	9	13:30			52	65
01:45			8	28	13:45			63	238
				5				76	251
				26					489
				54					
02:00			5	6	14:00			60	55
02:15			6	6	14:15			54	62
02:30			3	2	14:30			48	55
02:45			1	15	14:45			80	242
				6				53	225
				20					467
				35					
03:00			5	2	15:00			57	55
03:15			4	6	15:15			70	77
03:30			3	3	15:30			67	75
03:45			0	12	15:45			55	249
				1				61	268
				12					517
				24					
04:00			2	1	16:00			79	68
04:15			2	4	16:15			85	73
04:30			4	4	16:30			67	68
04:45			5	13	16:45			55	286
				0				63	272
				9					558
				22					
05:00			7	6	17:00			63	69
05:15			7	7	17:15			51	60
05:30			6	6	17:30			74	55
05:45			13	33	17:45			53	241
				4				63	247
				23					488
				56					
06:00			5	7	18:00			56	54
06:15			5	8	18:15			41	52
06:30			9	9	18:30			50	49
06:45			11	30	18:45			41	188
				21				61	216
				45					404
				75					
07:00			23	17	19:00			41	70
07:15			18	19	19:15			49	43
07:30			23	21	19:30			60	48
07:45			27	91	19:45			31	181
				22				35	196
				79					377
				170					
08:00			31	34	20:00			41	31
08:15			39	49	20:15			33	30
08:30			45	47	20:30			40	21
08:45			44	159	20:45			30	144
				59				25	107
				189					251
				348					
09:00			56	60	21:00			37	21
09:15			61	50	21:15			30	12
09:30			56	63	21:30			32	22
09:45			46	219	21:45			40	139
				56				17	72
				229					211
				448					
10:00			57	64	22:00			24	20
10:15			82	62	22:15			32	27
10:30			40	67	22:30			31	20
10:45			64	243	22:45			20	107
				68				22	89
				261					196
				504					
11:00			56	68	23:00			19	20
11:15			43	54	23:15			20	15
11:30			61	49	23:30			18	22
11:45			73	233	23:45			13	70
				65				11	68
				236					138
				469					
<b>Total Vol.</b>			1119	1178	2297			2326	2244
									<b>4570</b>

				Daily Totals		
				NB	SB	Combined
				EB	WB	
				3445	3422	<b>6867</b>
				PM		
				50.9%	49.1%	<b>66.6%</b>
Split %	AM					
	48.7%	51.3%	<b>33.4%</b>			
Peak Hour	11:30	10:15	<b>10:15</b>	15:30	15:15	<b>15:30</b>
Volume	254	265	<b>507</b>	286	281	<b>563</b>
P.H.F.	0.87	0.97	<b>0.88</b>	0.84	0.91	<b>0.89</b>

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

**Average Daily Traffic Volumes**  
Prepared by: Field Data Services of Arizona, Inc.

SATURDAY, OCTOBER 1 2011

CITY: BONSALL

PROJECT: CA11-0930-1822-003

CAMINO DEL REY E-O VIA MARIA ELENA

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB	
00:00			4	14	12:00			33	30	
00:15			2	8	12:15			38	19	
00:30			1	6	12:30			27	15	
00:45			4	11	12:45			41	139	
01:00			3	5	13:00			32	24	
01:15			1	8	13:15			26	25	
01:30			2	4	13:30			35	28	
01:45			3	9	13:45			31	124	
02:00			1	4	14:00			24	31	
02:15			1	6	14:15			32	33	
02:30			3	4	14:30			28	31	
02:45			0	5	14:45			31	115	
03:00			0	1	15:00			21	27	
03:15			0	1	15:15			31	39	
03:30			1	2	15:30			31	45	
03:45			0	1	15:45			22	105	
04:00			1	1	16:00			38	42	
04:15			0	2	16:15			34	38	
04:30			4	3	16:30			23	35	
04:45			1	6	16:45			27	122	
05:00			3	5	17:00			21	39	
05:15			2	1	17:15			16	37	
05:30			2	2	17:30			40	31	
05:45			1	8	17:45			27	104	
06:00			2	2	18:00			17	34	
06:15			3	2	18:15			12	24	
06:30			4	7	18:30			16	27	
06:45			6	15	18:45			17	62	
07:00			6	9	19:00			15	30	
07:15			4	8	19:15			19	21	
07:30			4	10	19:30			15	26	
07:45			10	24	19:45			16	65	
08:00			9	16	20:00			8	15	
08:15			11	10	20:15			5	20	
08:30			27	19	20:30			9	16	
08:45			25	72	20:45			8	30	
09:00			25	21	21:00			7	13	
09:15			36	21	21:15			10	9	
09:30			36	15	21:30			4	10	
09:45			45	142	21:45			22	43	
10:00			27	24	22:00			12	15	
10:15			29	19	22:15			7	13	
10:30			24	20	22:30			4	20	
10:45			32	112	22:45			4	27	
11:00			27	28	23:00			10	15	
11:15			33	17	23:15			6	5	
11:30			34	19	23:30			5	11	
11:45			47	141	23:45			4	25	
Total Vol.			546	480	1026	961			1203	2164

Split %	AM			Daily Totals		
				NB	SB	Combined
				EB	WB	
	53.2%	46.8%	<b>32.2%</b>	1507	1683	<b>3190</b>
				PM		
				44.4%	55.6%	<b>67.8%</b>
<b>Peak Hour</b>	11:30	10:15	<b>11:30</b>	12:00	15:15	<b>15:30</b>
<b>Volume</b>	152	93	<b>237</b>	139	155	<b>279</b>
<b>P.H.F.</b>	0.81	0.83	<b>0.93</b>	0.85	0.86	<b>0.87</b>

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

# Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

SATURDAY, OCTOBER 1 2011

CITY: BONSALL

PROJECT: CA11-0930-1822-004

CAMINO DEL REY BTN AQUEDUCT & OLD HWY 395

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			1	3	12:00			30	20
00:15			3	0	12:15			28	18
00:30			2	1	12:30			33	22
00:45			1	7	0	4	11	31	122
01:00			1	2	13:00			30	25
01:15			2	0	13:15			22	23
01:30			1	2	13:30			28	19
01:45			1	5	1	5	10	26	106
02:00			0	0	14:00			20	25
02:15			2	1	14:15			25	36
02:30			0	0	14:30			33	35
02:45			0	2	2	3	5	28	106
03:00			0	1	15:00			31	31
03:15			0	0	15:15			25	42
03:30			2	0	15:30			33	33
03:45			1	3	1	2	5	31	120
04:00			0	2	16:00			25	35
04:15			2	1	16:15			20	30
04:30			1	0	16:30			38	25
04:45			0	3	1	4	7	15	98
05:00			1	1	17:00			20	28
05:15			5	2	17:15			19	20
05:30			6	2	17:30			22	23
05:45			4	16	3	8	24	16	77
06:00			5	7	18:00			11	26
06:15			5	5	18:15			15	28
06:30			9	11	18:30			10	25
06:45			18	37	16	39	76	9	45
07:00			12	10	19:00			12	22
07:15			16	18	19:15			16	25
07:30			22	13	19:30			11	22
07:45			15	65	12	53	118	9	48
08:00			20	15	20:00			7	19
08:15			33	28	20:15			5	11
08:30			28	25	20:30			4	7
08:45			22	103	20	88	191	6	22
09:00			25	15	21:00			5	8
09:15			30	11	21:15			8	5
09:30			51	20	21:30			9	5
09:45			55	161	28	74	235	7	29
10:00			44	30	22:00			6	7
10:15			48	22	22:15			5	3
10:30			35	26	22:30			3	5
10:45			31	158	18	96	254	2	16
11:00			30	20	23:00			1	5
11:15			38	18	23:15			2	1
11:30			41	25	23:30			1	0
11:45			32	141	22	85	226	0	4
<b>Total Vol.</b>			701	461	<b>1162</b>			793	951

				<b>Daily Totals</b>		
	NB	SB		EB	WB	Combined
				1494	1412	2906
				<b>PM</b>		
<b>Split %</b>				45.5%	54.5%	60.0%
<b>Peak Hour</b>				12:00	15:15	15:00
<b>Volume</b>				122	150	266
<b>P.H.F.</b>				0.92	0.89	0.94

PACIFIC TRAFFIC & TRANSIT DATA SERVICES



**Average Daily Traffic Volumes**  
Prepared by: Field Data Services of Arizona, Inc.

SATURDAY, OCTOBER 1 2011

CITY: BONSALL

PROJECT: CA11-0930-1822-005

OLD HWY 395 BTN NELSON & CAMINO DEL REY

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00	5	7			12:00	25	28		
00:15	6	5			12:15	20	25		
00:30	5	6			12:30	26	24		
00:45	5	21	5	23	12:45	25	96	23	100
									196
01:00	2	5			13:00	30	22		
01:15	1	1			13:15	23	26		
01:30	0	0			13:30	23	30		
01:45	2	5	1	7	13:45	22	98	25	103
									201
02:00	2	2			14:00	25	28		
02:15	1	1			14:15	33	30		
02:30	3	0			14:30	31	25		
02:45	1	7	1	4	14:45	25	114	22	105
									219
03:00	0	3			15:00	31	26		
03:15	1	1			15:15	35	20		
03:30	2	2			15:30	48	19		
03:45	1	4	4	10	15:45	44	158	18	83
									241
04:00	5	5			16:00	30	15		
04:15	6	7			16:15	31	23		
04:30	4	4			16:30	35	28		
04:45	5	20	5	21	16:45	32	128	20	86
									214
05:00	7	12			17:00	33	27		
05:15	7	9			17:15	40	22		
05:30	8	11			17:30	35	26		
05:45	10	32	19	51	17:45	33	141	20	95
									236
06:00	9	10			18:00	32	19		
06:15	11	15			18:15	36	22		
06:30	12	11			18:30	31	18		
06:45	9	41	18	54	18:45	28	127	20	79
									206
07:00	15	16			19:00	20	26		
07:15	11	22			19:15	19	15		
07:30	16	21			19:30	22	11		
07:45	20	62	28	87	19:45	15	76	14	66
									142
08:00	15	11			20:00	11	10		
08:15	18	28			20:15	17	10		
08:30	20	26			20:30	18	18		
08:45	10	63	20	85	20:45	20	66	12	50
									116
09:00	18	21			21:00	12	10		
09:15	18	18			21:15	9	7		
09:30	22	21			21:30	11	9		
09:45	28	86	20	80	21:45	12	44	8	34
									78
10:00	26	26			22:00	10	10		
10:15	18	22			22:15	9	7		
10:30	22	28			22:30	8	6		
10:45	23	89	23	99	22:45	10	37	5	28
									65
11:00	22	28			23:00	4	5		
11:15	18	20			23:15	4	6		
11:30	21	17			23:30	3	5		
11:45	30	91	25	90	23:45	2	13	4	20
									33
<b>Total Vol.</b>	<b>521</b>	<b>611</b>		<b>1132</b>		<b>1098</b>	<b>849</b>		<b>1947</b>
					<b>Daily Totals</b>				
					NB	SB	EB	WB	Combined
					1619	1460			3079
					<b>PM</b>				
<b>Split %</b>	46.0%	54.0%		<b>36.8%</b>	56.4%	43.6%			<b>63.2%</b>
<b>Peak Hour</b>	11:45	11:45		<b>11:45</b>	15:00	13:30			<b>15:00</b>
<b>Volume</b>	101	102		<b>203</b>	158	113			<b>241</b>
<b>P.H.F.</b>	0.84	0.91		<b>0.92</b>	0.84	0.94			<b>0.90</b>

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

# Average Daily Traffic Volumes

Prepared by: Field Data Services of Arizona, Inc.

SATURDAY, OCTOBER 1 2011

CITY: BONSALL

PROJECT: CA11-0930-1822-006

OLD HWY 395 BTN CAMINO DEL REY & CIRCLE R

AM Period				PM Period			
NB	SB	EB	WB	NB	SB	EB	WB
00:00	11	8		12:00	40	52	
00:15	5	7		12:15	31	44	
00:30	6	4		12:30	44	51	
00:45	5	27	5 24	12:45	51	166	46 193
01:00	1	6		13:00	52	48	
01:15	2	5		13:15	44	54	
01:30	3	8		13:30	40	55	
01:45	2	8	9 28	13:45	38	174	42 199
02:00	5	5		14:00	37	48	
02:15	1	4		14:15	51	42	
02:30	2	1		14:30	55	45	
02:45	1	9	2 12	14:45	40	183	48 183
03:00	0	3		15:00	51	35	
03:15	5	0		15:15	68	33	
03:30	11	1		15:30	66	51	
03:45	12	28	2 6	15:45	70	255	42 161
04:00	9	0		16:00	51	35	
04:15	5	2		16:15	55	33	
04:30	9	2		16:30	52	42	
04:45	16	39	4 8	16:45	53	211	38 148
05:00	12	5		17:00	42	33	
05:15	9	9		17:15	48	30	
05:30	14	7		17:30	40	36	
05:45	11	46	10 31	17:45	35	165	31 130
06:00	10	14		18:00	33	28	
06:15	15	10		18:15	31	26	
06:30	20	11		18:30	28	21	
06:45	18	63	16 51	18:45	20	112	20 95
07:00	22	20		19:00	30	19	
07:15	26	19		19:15	19	22	
07:30	30	20		19:30	22	15	
07:45	29	107	25 84	19:45	16	87	18 74
08:00	28	28		20:00	20	21	
08:15	33	44		20:15	15	11	
08:30	31	51		20:30	18	17	
08:45	29	121	33 156	20:45	19	72	21 70
09:00	31	55		21:00	11	16	
09:15	33	42		21:15	10	11	
09:30	35	68		21:30	9	9	
09:45	48	147	60 225	21:45	12	42	12 48
10:00	37	67		22:00	13	13	
10:15	41	70		22:15	5	10	
10:30	44	55		22:30	8	9	
10:45	35	157	42 234	22:45	9	35	7 39
11:00	44	58		23:00	5	5	
11:15	32	60		23:15	5	8	
11:30	38	66		23:30	4	9	
11:45	51	165	51 235	23:45	2	16	5 27
<b>Total Vol.</b>	917	1094		<b>2011</b>	1518	1367	<b>2885</b>
				NB	SB	Daily Totals	
						EB	WB
				2435	2461		<b>Combined</b>
							<b>4896</b>
<b>Split %</b>	45.6%	54.4%		<b>AM</b>		<b>PM</b>	
			<b>41.1%</b>	52.6%	47.4%		<b>58.9%</b>
<b>Peak Hour</b>	09:45	09:30		<b>09:30</b>	15:00	12:45	<b>15:00</b>
<b>Volume</b>	170	265		<b>426</b>	255	203	<b>416</b>
<b>P.H.F.</b>	0.89	0.95		<b>0.96</b>	0.92	0.92	<b>0.89</b>

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

AM/Mid/PM Peak Hour Turn Counts

-2009 Counts

# Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: SR-76

DATE: 8/30/2009

LOCATION: City of Bonsall

E-W STREET: Olive Hill Rd/Camino del Rey

DAY: SUNDAY

PROJECT# 09-4327-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 0	WL .5	WT .5	WR 1	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM													
7:15 AM													
7:30 AM													
7:45 AM													
8:00 AM	4	95	4	20	135	2	11	6	25	9	7	21	339
8:15 AM	9	131	3	20	166	5	19	9	21	6	9	22	420
8:30 AM	8	129	4	22	133	2	25	9	16	5	8	29	390
8:45 AM	12	143	6	26	167	5	20	10	11	9	12	16	437
9:00 AM	6	133	4	26	202	3	19	14	16	12	8	24	467
9:15 AM	10	149	4	23	192	0	15	11	24	6	8	25	467
9:30 AM	11	157	3	38	227	5	27	11	19	9	9	33	549
9:45 AM	16	159	20	34	235	8	17	6	19	8	6	34	562
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 76	NT 1096	NR 48	SL 209	ST 1457	SR 30	EL 153	ET 76	ER 151	WL 64	WT 67	WR 204	TOTAL 3631
	nb a    nb d			sb a    sb d			eb a    eb d			wb a    nb d			
	1220   1453			1696   1672			380    333			335    173			

AM Peak Hr Begins at: 8:00 AM

PEAK VOLUMES =	33	498	17	88	601	14	75	34	73	29	36	88	1586
PEAK HR. FACTOR:		0.851			0.888			0.910			0.911		0.907

CONTROL: Signalized

# Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: SR-76

DATE: 8/30/2009

LOCATION: City of Bonsall

E-W STREET: Olive Hill Rd/Camino del Rey

DAY: SUNDAY

PROJECT# 09-4327-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 0	WL .5	WT .5	WR 1	TOTAL
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM	19	177	8	48	247	7	17	14	25	10	13	29	614
11:15 AM	7	201	8	33	296	18	26	17	23	7	10	37	683
11:30 AM	9	189	17	49	278	5	14	19	28	8	13	29	658
11:45 AM	21	217	23	65	265	10	21	18	11	2	8	23	684
12:00 PM	21	209	15	50	256	12	20	18	28	7	6	34	676
12:15 PM	21	215	20	61	286	3	17	18	25	4	14	40	724
12:30 PM	18	263	16	54	271	9	28	22	17	7	10	32	747
12:45 PM	16	224	26	57	264	11	27	8	20	5	1	29	688
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM													

TOTAL VOLUMES =	NL 132	NT 1695	NR 133	SL 417	ST 2163	SR 75	EL 170	ET 134	ER 177	WL 50	WT 75	WR 253	TOTAL 5474
	nb a    nb d			sb a    sb d			eb a    eb d			wb a    nb d			
	1960   2118			2655   2390			481    684			378    282			
NOON Peak Hr Begins at:				1200 PM									

PEAK VOLUMES =	76	911	77	222	1077	35	92	66	90	23	31	135	2835
PEAK HR. FACTOR:	0.896			0.953			0.925			0.815			0.949

CONTROL: Signalized

# Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: SR-76

DATE: 8/30/2009

LOCATION: City of Bonsall

E-W STREET: Olive Hill Rd/Camino del Rey DAY: SUNDAY

PROJECT# 09-4327-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 0	WL .5	WT .5	WR 1	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM	19	194	12	37	255	7	15	12	10	4	15	33	613
2:15 PM	27	220	16	30	223	4	27	6	14	4	12	17	600
2:30 PM	18	262	9	20	218	0	23	6	10	7	11	11	595
2:45 PM	11	243	8	18	231	1	22	11	11	3	13	26	598
3:00 PM	15	248	2	44	229	7	26	13	13	5	21	41	664
3:15 PM	11	291	10	40	239	1	25	7	16	9	9	29	687
3:30 PM	16	268	9	24	197	6	24	8	20	4	11	24	611
3:45 PM	13	277	10	34	214	8	20	7	16	4	8	24	635
4:00 PM	20	214	8	30	186	11	25	7	20	4	13	31	569
4:15 PM	21	291	11	27	246	6	20	5	26	6	9	24	692
4:30 PM	22	287	8	20	219	4	25	9	25	9	14	24	666
4:45 PM	17	282	10	42	223	10	28	17	15	10	11	20	685
5:00 PM													
5:15 PM													
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 210	NT 3077	NR 113	SL 366	ST 2680	SR 65	EL 280	ET 108	ER 196	WL 69	WT 147	WR 304	TOTAL 7615
	nb a    nb d			sb a    sb d			eb a    eb d			wb a    nb d			
	3400   3661			3111   2945			584    587			520    422			
PM Peak Hr Begins at:			2:30 PM										

PEAK	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	55	1044	29	122	917	9	96	37	50	24	54	107	2544
PEAK HR. FACTOR:	0.904			0.936			0.880			0.690			0.926

CONTROL: Signalized



# Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Old River Rd

DATE: 8/30/2009

LOCATION: City of Bonsall

E-W STREET: Camino Del Rey

DAY: SUNDAY

PROJECT# 09-4327-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 1	SR 1	EL 1	ET 0	ER 1	WL 0	WT 0	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM													
7:15 AM													
7:30 AM													
7:45 AM													
8:00 AM	2	9			7	33	25		7				83
8:15 AM	1	10			10	32	30		6				89
8:30 AM	2	13			9	35	26		8				93
8:45 AM	3	9			18	31	34		8				103
9:00 AM	12	5			19	32	36		10				114
9:15 AM	8	10			18	34	38		7				115
9:30 AM	10	7			18	39	37		23				134
9:45 AM	6	9			28	44	31		18				136
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 44	NT 72	NR 0	SL 0	ST 127	SR 280	EL 257	ET 0	ER 87	WL 0	WT 0	WR 0	TOTAL 867
	nb a	nb d		sb a	sb d		eb a	eb d		wb a	nb d		
	116	329		407	214		344	0		0	324		

AM Peak Hr Begins at: 8:00 AM

PEAK VOLUMES =	8	41	0	0	44	131	115	0	29	0	0	0	368
PEAK HR. FACTOR:		0.817			0.893		0.857						0.893

CONTROL: 3 Way Stop

# Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Old River Rd

DATE: 8/30/2009

LOCATION: City of Bonsall

E-W STREET: Camino Del Rey

DAY: SUNDAY

PROJECT# 09-4327-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 1	SR 1	EL 1	ET 0	ER 1	WL 0	WT 0	WR 0	TOTAL
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM	18	13			22	45	33		21				152
11:15 AM	17	12			17	48	28		29				151
11:30 AM	11	18			14	36	50		37				166
11:45 AM	9	28			16	35	53		45				186
12:00 PM	13	12			17	40	50		36				168
12:15 PM	9	8			28	43	56		33				177
12:30 PM	12	15			17	45	54		44				187
12:45 PM	20	15			19	28	38		48				168
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM													

TOTAL VOLUMES =	NL 109	NT 121	NR 0	SL 0	ST 150	SR 320	EL 362	ET 0	ER 293	WL 0	WT 0	WR 0	TOTAL 1355
	nb a    nb d			sb a    sb d			eb a    eb d			wb a    nb d			
	230    483			470    443			655    0			0    429			

NOON Peak Hr Begins at: 1145 AM

PEAK VOLUMES =	43	63	0	0	78	163	213	0	158	0	0	0	718
PEAK HR. FACTOR:	0.716			0.849			0.946			0.960			

CONTROL: 3 Way Stop

# Intersection Turning Movement

Prepared by:

## National Data & Surveying Services

N-S STREET: Old River Rd

DATE: 8/30/2009

LOCATION: City of Bonsall

E-W STREET: Camino Del Rey

DAY: SUNDAY

PROJECT# 09-4327-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 1	SR 1	EL 1	ET 0	ER 1	WL 0	WT 0	WR 0	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM	18	19			13	39	33		22				144
2:15 PM	17	14			11	32	43		13				130
2:30 PM	14	12			11	26	29		14				106
2:45 PM	18	7			11	41	28		16				121
3:00 PM	18	13			27	50	40		17				165
3:15 PM	14	22			13	40	46		16				151
3:30 PM	12	20			11	37	33		9				122
3:45 PM	17	12			19	26	40		11				125
4:00 PM	17	14			15	36	31		14				127
4:15 PM	12	17			14	34	38		6				121
4:30 PM	11	13			29	40	31		8				132
4:45 PM	14	11			14	42	42		19				142
5:00 PM													
5:15 PM													
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 182	NT 174	NR 0	SL 0	ST 188	SR 443	EL 434	ET 0	ER 165	WL 0	WT 0	WR 0	TOTAL 1586
	nb a	nb d		sb a	sb d		eb a	eb d		wb a	nb d		
	356	608		631	353		599	0		0	625		

PM Peak Hr Begins at: 2:30 PM

PEAK VOLUMES =	64	54	0	0	62	157	143	0	63	0	0	0	543
PEAK HR. FACTOR:		0.819			0.711			0.831					0.823

CONTROL: 3 Way Stop

# Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Old Hwy 395

DATE: 10/11/2009

LOCATION: City of Escondido

E-W STREET: Camino del Rey

DAY: SUNDAY

PROJECT# 09-4364-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 0	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM													
7:15 AM													
7:30 AM													
7:45 AM													
8:00 AM	5	9			6	2	3		13				38
8:15 AM	12	8			11	1	1		12				45
8:30 AM	20	12			8	2	0		20				62
8:45 AM	20	4			4	3	3		25				59
9:00 AM	19	6			7	1	1		29				63
9:15 AM	16	17			22	1	1		14				71
9:30 AM	4	13			9	1	2		25				54
9:45 AM	11	14			11	2	3		14				55
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 107	NT 83	NR 0	SL 0	ST 78	SR 13	EL 14	ET 0	ER 152	WL 0	WT 0	WR 0	TOTAL 447
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nb a    nb d                      sb a    sb d                      eb a    eb d                      wb a    nb d  
 190    97                      91    230                      166    0                      0    120  
 AM Peak Hr Begins at: 8:00 AM

PEAK VOLUMES =	57	33	0	0	29	8	7	0	70	0	0	0	204
PEAK HR. FACTOR:	0.703			0.771			0.688			0.823			

CONTROL: 1-Way Stop (EB)



# Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Old Hwy 395

DATE: 10/11/2009

LOCATION: City of Escondido

E-W STREET: Camino del Rey

DAY: SUNDAY

PROJECT# 09-4364-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 0	WR 0	TOTAL
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM	13	13			10	1	0		27				64
11:15 AM	21	15			18	2	3		24				83
11:30 AM	15	16			16	2	4		29				82
11:45 AM	16	17			19	2	5		35				94
12:00 PM	18	22			18	2	2		18				80
12:15 PM	17	18			29	3	2		26				95
12:30 PM	22	15			15	5	2		31				90
12:45 PM	19	22			14	5	2		29				91
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM													

TOTAL VOLUMES =	NL 141	NT 138	NR 0	SL 0	ST 139	SR 22	EL 20	ET 0	ER 219	WL 0	WT 0	WR 0	TOTAL 679
	nb a	nb d		sb a	sb d		eb a	eb d		wb a	nb d		
	279 158			161 358			239 0			0 163			
NOON Peak Hr Begins at:			1145 AM										

PEAK	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	73	72	0	0	81	12	11	0	110	0	0	0	359
PEAK HR.													
FACTOR:	0.906			0.727			0.756			0.000			0.945

CONTROL: 1-Way Stop (EB)

# Intersection Turning Movement

Prepared by:

## National Data & Surveying Services

N-S STREET: Old Hwy 395

DATE: 10/11/2009

LOCATION: City of Escondido

E-W STREET: Camino del Rey

DAY: SUNDAY

PROJECT# 09-4364-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 0	WR 0	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM	19	15			22	2	2		22				82
2:15 PM	28	16			20	4	4		18				90
2:30 PM	21	12			11	4	3		22				73
2:45 PM	31	18			12	3	3		19				86
3:00 PM	26	20			9	2	4		16				77
3:15 PM	26	18			19	0	4		18				85
3:30 PM	18	22			18	2	3		11				74
3:45 PM	31	29			16	2	1		22				101
4:00 PM	20	19			16	3	3		11				72
4:15 PM	22	15			12	3	1		18				71
4:30 PM	22	16			17	5	2		9				71
4:45 PM	25	22			13	2	5		22				89
5:00 PM													
5:15 PM													
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 289	NT 222	NR 0	SL 0	ST 185	SR 32	EL 35	ET 0	ER 208	WL 0	WT 0	WR 0	TOTAL 971
	nb a    nb d			sb a    sb d			eb a    eb d			wb a    nb d			
	511    257			217    393			243    0			0    321			

PM Peak Hr Begins at: 2:30 PM

PEAK VOLUMES =	104	68	0	0	51	9	14	0	75	0	0	0	321
PEAK HR. FACTOR:	0.878			0.789			0.890			0.933			

CONTROL: 1-Way Stop (EB)

-2011 Counts



# Intersection Turning Movement

Prepared by:

## National Data & Surveying Services

N-S STREET: Olive Hill Rd/Camino del Rey DATE: 10-15-11

LOCATION: City of Bonsall

E-W STREET: SR-76

DAY: SATURDAY

PROJECT# 0908001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 0	WL .5	WT .5	WR 1	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM													
7:15 AM													
7:30 AM													
7:45 AM													
8:00 AM	8	12	28	23	14	20	12	144	12	17	144	6	440
8:15 AM	6	9	23	21	21	18	14	133	10	22	156	6	439
8:30 AM	7	11	33	22	12	14	20	147	7	23	175	5	476
8:45 AM	5	8	41	19	11	14	21	161	9	20	162	4	475
9:00 AM	11	13	29	19	15	13	14	147	11	28	183	7	490
9:15 AM	4	14	34	17	17	22	14	192	9	26	190	7	546
9:30 AM	10	12	26	27	15	21	21	211	8	31	188	9	579
9:45 AM	15	7	35	32	16	23	15	231	7	24	183	7	595
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 66	NT 86	NR 249	SL 180	ST 121	SR 145	EL 131	ET 1366	ER 73	WL 191	WT 1381	WR 51	TOTAL 4040
	nb a    nb d			sb a    sb d			eb a    eb d			wb a    nb d			
	401    268			446    385			1570    1795			1623    1592			
AM Peak Hr Begins at:			8:00 AM										

PEAK VOLUMES =	26	40	125	85	58	66	67	585	38	82	637	21	1830
PEAK HR. FACTOR:	0.884			0.871			0.903			0.911			0.961

CONTROL: Signalized

# Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Olive Hill Rd/Camino del Rey

DATE: 10-15-11

LOCATION: City of Bonsall

E-W STREET: SR-76

DAY: SATURDAY

PROJECT# 090801

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 0	WL .5	WT .5	WR 1	TOTAL
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM	5	13	32	29	12	15	17	211	7	21	199	13	574
11:15 AM	7	9	42	40	14	14	13	213	6	29	236	11	634
11:30 AM	12	12	40	16	17	17	16	231	12	34	228	10	645
11:45 AM	3	16	27	31	17	20	18	202	12	39	205	16	606
12:00 PM	15	13	40	27	26	12	15	232	8	37	228	13	666
12:15 PM	13	16	33	33	26	18	19	245	9	43	226	21	702
12:30 PM	7	21	39	21	18	21	22	219	15	38	219	15	655
12:45 PM	4	19	42	25	13	15	21	233	7	33	230	17	659
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	66	119	295	222	143	132	141	1786	76	274	1771	116	5141
	nb a	nb d		sb a	sb d		eb a	eb d		wb a	wb d		
	480	376		497	493		2003	2303		2161	1969		
NOON Peak Hr Begins at: 1200 PM													

PEAK	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	39	69	154	106	83	66	77	929	39	151	903	66	2682
PEAK HR.													
FACTOR:		0.963			0.828			0.957			0.966		0.955

CONTROL: Signalized

# Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Olive Hill Rd/Camino del Rey DATE: 10-15-11

LOCATION: City of Bonsall

E-W STREET: SR-76

DAY: SATURDAY

PROJECT# 090801

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 0	WL .5	WT .5	WR 1	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM	6	21	53	31	19	16	24	243	8	22	227	9	679
2:15 PM	11	20	40	30	15	12	22	255	7	18	198	18	646
2:30 PM	6	11	38	21	14	13	27	219	12	25	190	11	587
2:45 PM	9	13	33	27	12	16	26	224	9	26	213	14	622
3:00 PM	10	23	42	26	18	10	19	209	9	33	210	17	626
3:15 PM	5	14	44	30	11	15	21	225	4	32	231	12	644
3:30 PM	7	28	56	33	16	11	25	247	7	31	218	20	699
3:45 PM	5	17	44	29	14	17	16	257	6	26	196	14	641
4:00 PM	9	23	37	20	22	15	18	230	13	20	223	23	653
4:15 PM	8	11	45	22	17	17	17	235	8	17	237	13	647
4:30 PM	11	10	30	28	18	13	21	229	11	19	209	16	615
4:45 PM	7	15	38	25	12	13	22	244	7	22	221	12	638
5:00 PM													
5:15 PM													
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 94	NT 206	NR 500	SL 322	ST 188	SR 168	EL 258	ET 2817	ER 101	WL 291	WT 2573	WR 179	TOTAL 7697
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nb a    nb d                      sb a    sb d                      eb a    eb d                      wb a    nb d  
           800    643                      678    580                      3176    3639                      3043    2835  
 PM Peak Hr Begins at: 2:30 PM

PEAK VOLUMES =	30	61	157	104	55	54	93	877	34	116	844	54	2479
PEAK HR. FACTOR:		0.827			0.951			0.969			0.922		0.962

CONTROL: Signalized

# Intersection Turning Movement

N-S STREET: Old River Rd

DATE: 10-01-11

LOCATION: City of Escondido

E-W STREET: Camino del Rey

DAY: SATURDAY

PROJECT# 090801

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 0	NR 1	SL 0	ST 0	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM													
7:15 AM													
7:30 AM													
7:45 AM													
8:00 AM	8		5					46	14	18	27		118
8:15 AM	16		11					32	5	12	36		112
8:30 AM	14		9					36	11	28	40		138
8:45 AM	10		12					30	9	21	26		108
9:00 AM	11		12					36	17	14	39		129
9:15 AM	14		9					40	16	15	45		139
9:30 AM	8		8					41	11	20	38		126
9:45 AM	18		6					46	14	19	40		143
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 99	NT 0	NR 72	SL 0	ST 0	SR 0	EL 0	ET 307	ER 97	WL 147	WT 291	WR 0	TOTAL 1013
	nb a    nb d			sb a    sb d			eb a    eb d			wb a    nb d			
	171    0			0    244			404    379			438    390			
AM Peak Hr Begins at:			8:00 AM										

PEAK VOLUMES =	48	0	37	0	0	0	0	144	39	79	129	0	476
PEAK HR. FACTOR:	0.787			#DIV/0!			0.763			0.862			

CONTROL: 1-Way Stop (EB)

# Intersection Turning Movement

N-S STREET: Old River Rd

DATE: 10-01-11

LOCATION: City of Escondido

E-W STREET: Camino del Rey

DAY: SATURDAY

PROJECT# 090801

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 0	NR 1	SL 0	ST 0	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM	13		14					44	18	18	24		131
11:15 AM	14		11					48	23	20	37		153
11:30 AM	16		9					57	20	23	40		165
11:45 AM	22		19					35	18	14	32		140
12:00 PM	18		14					43	12	12	43		142
12:15 PM	20		18					53	17	16	49		173
12:30 PM	17		12					44	26	19	35		153
12:45 PM	24		14					41	20	22	45		166
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM													

TOTAL VOLUMES =	NL 144	NT 0	NR 111	SL 0	ST 0	SR 0	EL 0	ET 365	ER 154	WL 144	WT 305	WR 0	TOTAL 1223
	nb a    nb d			sb a    sb d			eb a    eb d			wb a    nb d			
	255    0			0    298			519    476			449    449			
NOON Peak Hr Begins at:				1200 PM									

PEAK	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	79	0	58	0	0	0	0	181	75	69	172	0	634
PEAK HR. FACTOR:	0.901			0.000			0.914			0.000			0.916

CONTROL: 1-Way Stop (EB)



# Intersection Turning Movement

N-S STREET: Old River Rd

DATE: 10-01-11

LOCATION: City of Escondido

E-W STREET: Camino del Rey

DAY: SATURDAY

PROJECT# 090801

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 0	NR 1	SL 0	ST 0	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM	12		22					46	10	17	34		141
2:15 PM	14		28					44	13	18	30		147
2:30 PM	7		23					41	7	13	44		135
2:45 PM	18		14					41	16	29	40		158
3:00 PM	15		20					44	20	26	48		173
3:15 PM	17		24					38	18	18	52		167
3:30 PM	19		26					42	12	23	55		177
3:45 PM	22		20					50	8	25	60		185
4:00 PM	21		15					54	15	21	54		180
4:15 PM	14		16					47	13	23	42		155
4:30 PM	17		21					41	11	26	40		156
4:45 PM	20		23					41	18	20	46		168
5:00 PM													
5:15 PM													
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 196	NT 0	NR 252	SL 0	ST 0	SR 0	EL 0	ET 529	ER 161	WL 259	WT 545	WR 0	TOTAL 1942
	nb a	nb d		sb a	sb d		eb a	eb d		wb a	nb d		
	448	0		0	420		690	781		804	741		
PM Peak Hr Begins at: 2:30 PM													

PEAK VOLUMES =	57	0	81	0	0	0	0	164	61	86	184	0	633
PEAK HR. FACTOR:		0.841			#DIV/0!			0.879					0.915

CONTROL: 1-Way Stop (EB)



# Intersection Turning Movement

N-S STREET: Old Hwy 395

DATE: 10-01-2011

LOCATION: City of Escondido

E-W STREET: Camino del Rey

DAY: SATURDAY

PROJECT# 090801

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 0	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM													
7:15 AM													
7:30 AM													
7:45 AM													
8:00 AM	10	15			7	2	0		18				52
8:15 AM	28	9			19	3	5		27				91
8:30 AM	17	11			19	4	2		21				74
8:45 AM	14	10			16	1	3		20				64
9:00 AM	12	13			22	2	2		25				76
9:15 AM	14	15			15	2	0		31				77
9:30 AM	18	14			20	1	3		44				100
9:45 AM	30	20			19	0	5		45				119
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 143	NT 107	NR 0	SL 0	ST 137	SR 15	EL 20	ET 0	ER 231	WL 0	WT 0	WR 0	TOTAL 653
	nb a	nb d		sb a	sb d		eb a	eb d		wb a	nb d		
	250	127		152	368		251	0		0	158		

AM Peak Hr Begins at: 8:00 AM

PEAK VOLUMES =	69	45	0	0	61	10	10	0	86	0	0	0	281
PEAK HR. FACTOR:		0.770			0.772			0.750					0.772

CONTROL: 1-Way Stop (EB)

# Intersection Turning Movement

N-S STREET: Old Hwy 395

DATE: 10/11/2009

LOCATION: City of Escondido

E-W STREET: Camino del Rey

DAY: SUNDAY

PROJECT# 09-4364-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 0	WR 0	TOTAL
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM	18	20			21	1	0		31				91
11:15 AM	16	15			23	0	0		33				87
11:30 AM	21	19			20	2	2		37				101
11:45 AM	25	25			22	1	4		32				109
12:00 PM	18	20			27	1	2		25				93
12:15 PM	17	19			18	2	5		22				83
12:30 PM	23	22			19	3	1		38				106
12:45 PM	25	24			24	1	4		26				104
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM													

TOTAL VOLUMES =	NL 163	NT 164	NR 0	SL 0	ST 174	SR 11	EL 18	ET 0	ER 244	WL 0	WT 0	WR 0	TOTAL 774
	nb a    nb d			sb a    sb d			eb a    eb d			wb a    nb d			
	327    182			185    418			262       0			0       174			
NOON Peak Hr Begins at:    1145 AM													

PEAK VOLUMES =	83	86	0	0	86	7	12	0	117	0	0	0	391
PEAK HR. FACTOR:	0.845			0.830			0.827			0.000			0.897

CONTROL: 1-Way Stop (EB)

# Intersection Turning Movement

N-S STREET: Old Hwy 395

DATE: 10-01-11

LOCATION: City of Escondido

E-W STREET: Camino del Rey

DAY: SATURDAY

PROJECT# 090801

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 0	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 0	WR 0	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM	23	17			21	4	3		20				88
2:15 PM	29	26			25	4	5		19				108
2:30 PM	31	21			23	3	7		23				108
2:45 PM	24	16			19	2	6		18				85
3:00 PM	23	24			17	6	6		22				98
3:15 PM	31	34			12	7	5		21				110
3:30 PM	27	37			16	3	8		28				119
3:45 PM	32	30			12	5	3		23				105
4:00 PM	31	26			21	8	4		15				105
4:15 PM	24	30			19	3	2		17				95
4:30 PM	27	31			22	5	4		26				115
4:45 PM	19	32			17	4	2		17				91
5:00 PM													
5:15 PM													
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 321	NT 324	NR 0	SL 0	ST 224	SR 54	EL 55	ET 0	ER 249	WL 0	WT 0	WR 0	TOTAL 1227
	nb a	nb d		sb a	sb d		eb a	eb d		wb a	nb d		
	645	379		278	473		304	0		0	375		
PM Peak Hr Begins at: 2:30 PM													

PEAK VOLUMES =	109	95	0	0	71	18	24	0	84	0	0	0	401
PEAK HR. FACTOR:		0.785			0.856			0.900					0.911

CONTROL: 1-Way Stop (EB)

## County of San Diego Level of Service Thresholds

**TABLE 1**  
**AVERAGE DAILY VEHICLE TRIPS\***

CIRCULATION ELEMENT ROADS		LEVELS OF SERVICE				
Road Classification	# of Travel Lanes	A	B	C	D	E
Expressway (6.1)	6	<36,000	<54,000	<70,000	<86,000	<108,000
Prime Arterial (6.2)	6	<22,200	<37,000	<44,600	<50,000	<57,000
Major Road (4.1A)	4	<14,800	<24,700	<29,600	<33,400	<37,000
	w/ Intermittent Turn Lanes (4.1B)	<13,700	<22,800	<27,400	<30,800	<34,200
Collector	4	<13,700	<22,800	<27,400	<30,800	<34,200
Boulevard	w/ Raised Median (4.2A)	<18,000	<21,000	<24,000	<27,000	<30,000
	w/ Intermittent Turn Lanes (4.2B)	<16,800	<19,600	<22,500	<25,000	<28,000
Town Collector	2	<3,000	<6,000	<9,500	<13,500	<19,000
Community Collector	w/ Raised Median (2.1A)	<10,000	<11,700	<13,400	<15,000	<19,000
	w/ Continuous Left Turn Lane (2.1B)	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Intermittent Turn Lane (2.1C)	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Passing Lane (2.1D)	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.1E)	<1,900	<4,100	<7,100	<10,900	<16,200
Light Collector	w/ Raised Median (2.2A)	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Continuous Left Turn Lane (2.2B)	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Intermittent Turn Lane (2.2C)	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Passing Lane (2.2D)	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.2E)	<1,900	<4,100	<7,100	<10,900	<16,200
		<1,900	<4,100	<7,100	<10,900	<16,200
	w/ Reduced Shoulder (2.2F)	<5,800	<6,800	<7,800	<8,700	<9,700
Rural Collector	2	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Light Collector	2	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Mountain	2	<1,900	<4,100	<7,100	<10,900	<16,200
Recreational Parkway	2	<1,900	<4,100	<7,100	<10,900	<16,200
Minor Collector	w/ Raised Median (2.3A)	<3,000	<6,000	<7,000	<8,000	<9,000
	w/ Intermittent Turn Lane (2.3B)	<3,000	<6,000	<7,000	<8,000	<9,000
	No Median (2.3C)	<1,900	<4,100	<6,000	<7,000	<8,000
NON-CIRCULATION ELEMENT ROADS**		LEVELS OF SERVICE				
Residential Collector	2	-	-	<4,500	-	-
Rural Residential Collector***	2	-	-	<4,500	-	-
Residential Road	2	-	-	<1,500	-	-
Rural Residential Road***	2	-	-	<1,500	-	-
Residential Cul-de-Sac or Loop Road	2	-	-	<200	-	-

\* The values shown are subject to adjustment based on the geometry of the roadway, side frictions, and other relevant factors as determined by the Director, Department of Public Works.

\*\* Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

\*\*\* Rural Residential Collectors and Rural Residential Roads are intended to serve areas with lot sizes of 2 acres or more which do not have a demand for on-street parking. On-street parking is not assured for these cross sections. Additional right-of-way is needed if on-street parking is in paved area.

\*\*\*\* See Tables 2A and 2B for roadway surfacing and right-of-way widths.



San Diego County *Guidelines for Determining Significance*



**COUNTY OF SAN DIEGO**  
**GUIDELINES FOR DETERMINING SIGNIFICANCE**  
**TRANSPORTATION AND TRAFFIC**



**LAND USE AND ENVIRONMENT GROUP**

**Department of Planning and Land Use**  
**Department of Public Works**

**Second Revision**  
**June 30, 2009**

**First Modification**  
**February 19, 2010**

## EXPLANATION

These Guidelines for Determining Significance for Transportation and Traffic and information presented herein shall be used by County staff in their review of discretionary projects and environmental documents pursuant to the California Environmental Quality Act (CEQA). These Guidelines present a range of quantitative, qualitative, and performance levels for particular environmental effects. Normally, (in the absence of substantial evidence to the contrary), non-compliance with a particular standard stated in these Guidelines will usually mean the project will result in a significant effect, whereas compliance will normally mean the effect will be determined to be "less than significant." Section 15064(b) of the State CEQA Guidelines states:

"The determination whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on factual and scientific data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

These Guidelines assist in providing a consistent, objective and predictable evaluation of significant effects. These Guidelines are not binding on any decision-maker and should not be substituted for the use of independent judgment to determine significance or the evaluation of evidence in the record. The County reserves the right to request further, project specific, information in its evaluation of a project's environmental effects and to modify these Guidelines in the event a scientific discovery or factual data alters the common application of a Guideline. In addition, evaluations to verify the applicability of the significance guidelines for individual project conditions may be necessary. Additional evaluations may include analysis of vehicle headways, speeds, average gaps, queues, delay, or other factors.

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### **List of Acronyms**

ADT	Average Daily Trips
CALTRANS	California Department of Transportation
CEQA	California Environmental Quality Act
CMP	Congestion Management Plan
DPLU	Department of Planning and Land Use
HCM	Highway Capacity Manual
ITE	Institute of Traffic Engineers
LOS	Level of Service
min	Minute
mph	Miles per Hour
MTDB	Metropolitan Transit Development Board
NCTD	North San Diego County Transit District
PFE	Public Facilities Element
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SANTEC	San Diego Traffic Engineers' Council
sec	Second
TIS	Traffic Impact Study
V/C	Volume to Capacity
VMT	Vehicle Miles Traveled



#### **4.0 GUIDELINES FOR DETERMINING SIGNIFICANCE**

**The following significance guidelines should guide the evaluation of whether a significant impact to transportation and traffic will occur as a result of project implementation. A project will generally be considered to have a significant effect if it proposes any of the following, absent specific evidence to the contrary. Conversely, if a project does not propose any of the following, it will generally not be considered to have a significant effect on transportation and traffic, absent specific evidence of such an effect.**

This section provides guidance for evaluating adverse environmental effects a project may have in relation to traffic and transportation. The guidelines for determining significance are organized into eight categories: road segments, intersections, two-lane highways, ramps, congestion management plan, hazards due to an existing transportation design feature, hazards to pedestrians or bicyclists, and public transportation.

##### Land Development Projects

Land Development projects are projects that may result in an increase in the density or intensity or use on a parcel or parcels of land. These projects include, but are not limited to subdivisions, use permits, rezones and general plan amendments. Land development projects, typically, require discretionary approval. Due to the increased intensity of uses, land development projects generate additional traffic onto the County's road network and can contribute towards traffic congestion. A traffic impact study is often required to fully assess potential traffic impacts that may result from implementation of the proposed project.

##### Road Improvement Projects

Road improvement projects are projects that can affect transportation system operations; including level of service and other performance measures. Projects may consist of increasing road capacity or improving the traffic operations on the County's road network. This section refers to stand alone road improvement projects that are not improvements associated with a proposed development. These projects are typically publicly initiated. Road improvement projects do not generate additional trips but, in some cases, may cause a redistribution of trips on the County's road network. Road improvement projects are typically one or more of the following; road widening, construction of new road, intersection improvements and operational improvements/road maintenance. Additional guidance on how to evaluate Publicly Initiated Road Improvement Projects is included as Attachment B of the Report Format and Content Requirements.

#### 4.1 Road Segments

Pursuant to the County's General Plan Public Facilities Element (PFE Pg. XII-4-18), new development must provide improvements or other measures to mitigate traffic impacts to avoid:

- (a) Reduction in Level of Service (LOS) below "C" for on-site Circulation Element roads;
- (b) Reduction in LOS below "D" for off-site and on-site abutting Circulation Element roads; and
- (c) "Significantly impacting congestion" on roads that operate at LOS "E" or "F". If impacts cannot be mitigated, the project cannot be approved unless a statement of overriding findings is made pursuant to the State CEQA Guidelines. The PFE, however, does not include specific guidelines for determining the amount of additional traffic that would "significantly impact congestion" on such roads.

The County has created the following guidelines to evaluate likely motor vehicle traffic impacts of a proposed project for road segments and intersections serving that project site, for purposes of determining whether the development would "significantly impact congestion" on the referenced LOS E and F roads. The guidelines are summarized in Table 1. The levels in Table 1 are based upon average operating conditions on County roadways. It should be noted that these levels only establish general guidelines, and that the specific project location must be taken into account in conducting an analysis of traffic impact from new development.

##### **On-site Circulation Element Roads**

PFE, Transportation, Policy 1.1 states that "new development shall provide needed roadway expansion and improvements on-site to meet demand created by the development, and to maintain a Level of Service C on Circulation Element Roads during peak traffic hours". Pursuant to this policy, a significant traffic impact would result if:

- ***The additional or redistributed ADT generated by the proposed land development project will cause on-site Circulation Element Roads to operate below LOS C during peak traffic hours except within the Otay Ranch and Harmony Grove Village plans as specified in the PFE, Implementation Measure 1.1.2.***

##### **Off-site Circulation Element Roads**

PFE, Transportation, Policy 1.1 also addresses offsite Circulation Element roads. It states, "new development shall provide off-site improvements designed to contribute to the overall achievement of a Level of Service D on Circulation Element Roads". Implementation Measure 1.1.3 addresses projects that would significantly impact



congestion on roads at LOS E or F. It states that new development that would significantly impact congestion on roads operating at LOS E or F, either currently or as a result of the project, will be denied unless improvements are scheduled to attain a LOS to D or better or appropriate mitigation is provided. The following significance guidelines define a method for evaluating whether or not increased traffic volumes generated or redistributed from a proposed project will "significantly impact congestion" on County roads, operating at LOS E or F, either currently or as a result of the project.

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a road segment:

- *The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Circulation Element Road or State Highway currently operating at LOS E or LOS F, or will cause a Circulation Element Road or State Highway to operate at a LOS E or LOS F as a result of the proposed project as identified in Table 1, or*
- *The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity.*

Table 1  
Measures of Significant Project Impacts to Congestion on Circulation Element Road Segments:  
Allowable Increases on Congested Road Segments

Level of service	Two-lane road	Four-lane road	Six-lane road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT
Notes:			
1. By adding proposed project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes additional trips must mitigate a share of the cumulative impacts.			
2. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.			

## LOS E

The first significance criterion listed in Table 1 addresses roadways presently operating at LOS E. Based on these criteria, an impact from new development on an LOS E road would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 200 ADT. Using SANDAG's "Brief Guide for Vehicular Traffic Generation Rates for the San Diego Region" for most discretionary projects this would generate less than 25 peak hour trips. On average, during peak hour conditions, this would be only one additional car every 2.4 minutes.

Therefore, the addition of 200 ADT, in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and therefore would not constitute a



significant impact on the roadway. Significance criteria were also established for 4-lane and 6-lane roads operating at LOS E and are based upon the above 24 hour ADT significance criterion established for two-lane roads. The two-lane road criterion was doubled to determine impacts to four-lane roads and tripled to determine impacts to six-lane roads. This was considered to be conservative since the 24 hour per lane road capacity for a 4-lane road is more than double that of a two-lane road and the per lane capacity of a six-lane road is more than triple that of the two-lane road. For LOS E roads, the additional significance criteria are 400 ADT for a 4-lane road and 600 ADT for a 6-lane road.

Similar to the criteria for two-lane roads, 400 ADT for a 4-lane road and 600 ADT for a 6-lane road criteria would generate less than 25 per lane peak hour trips for most discretionary projects. On average, during peak hour conditions, this would be only one additional car per lane every 2.4 minutes. The addition of 200 ADT per lane (400 ADT for a 4 lane road or 600 ADT for a 6 lane road), in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway. Road capacities based upon level of service for County roads can be found in the County's Public Road Standards, available online at <http://www.sdcounty.ca.gov/dpw/land/rtelocs.html>.

#### **LOS F**

The second significance criteria listed in Table 1 addresses roadways presently operating at LOS F. Under LOS F congested conditions, small changes and disruptions to the traffic flow on County Circulation Element Roads can have a greater effect on traffic operations when compared to other LOS conditions. In order to better account for potential effects of increased traffic on LOS F roads more stringent significance criteria was established when compared to that for LOS E. Based on this guidance, an impact from new development on an LOS F road would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 100. Again, using SANDAG's "Brief Guide for Vehicular Traffic Generation Rates for the San Diego Region" for most discretionary projects this would generate less than 12.5 peak hour trips. On average, during peak hour conditions, this would be only one additional car every 4.8 minutes.

The addition of 100 ADT, in most cases, would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway. The same approach used to determine significance criteria for 4-lane and 6-lane roads operating at LOS E was used to determine appropriate significance criteria for four-lane and six-lane roads operating at LOS F. Based on this approach, the significance criteria for a four-lane road (200 ADT) and for a six-lane road (300 ADT) would generate less than 12.5 per lane peak hour trips for most discretionary projects. On average, during peak hour conditions, this would be only one additional car per lane every 4.8 minutes. The addition of 100 per lane ADT (200 ADT for a 4-lane road and 300 ADT for a 6-lane road) would, in most cases, not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway.

In summary, under extremely congested LOS F conditions, small changes and disruptions to the traffic flow can significantly affect traffic operations and additional project traffic can increase the likelihood or frequency of these events. Therefore, the LOS F ADT significance criteria was set at 100 ADT (50% of the LOS E criterion) to provide a higher level of assurance that the traffic allowed under the criterion would not significantly impact traffic operation on the road segment.

### Non-Circulation Element Residential Streets

Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots and not to carry through traffic, however, for projects that will substantially increase traffic volumes on residential streets, a comparison of the traffic volumes on the residential streets with the recommended design capacity must be provided. Recommended design capacities for residential non-Circulation Element streets are provided in the San Diego County Public and Private Road Standards. Traffic volume that exceeds the design capacity on residential streets may impact residences and should be analyzed on a case-by-case basis.

## 4.2 Intersections

This section provides guidance for evaluating adverse environmental effects a project may have on signalized and unsignalized intersections. Table 2 summarizes significant project impacts for signalized and unsignalized intersections.

**Table 2**  
**Measures of Significant Project Impacts to Congestion on Intersections:**  
**Allowable Increases on Congested Intersections**

Level of Service	Signalized	Unsignalized
LOS E	Delay of 2 seconds or less	20 or less peak hour trips on a critical movement
LOS F	Either a Delay of 1 second, or 5 peak hour trips or less on a critical movement	5 or less peak hour trips on a critical movement
<b>Notes:</b> <ol style="list-style-type: none"> <li>1. A critical movement is an intersection movement (right turn, left turn, through-movement) that experiences excessive queues, which typically operate at LOS F. Also if a project adds significant volume to a minor roadway approach, a gap study should be provided that details the headways between vehicles on the major roadway.</li> <li>2. By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.</li> <li>3. The County may also determine impacts have occurred on roads even when a project's direct or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.</li> <li>4. For determining significance at signalized intersections with LOS F conditions, the analysis must evaluate both the delay <u>and</u> the number of trips on a critical movement, exceedance of either criteria result in a significant impact.</li> </ol>		



#### 4.2.1 Signalized

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a signalized intersection:

- *The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F, or will cause a signalized intersection to operate at a LOS E or LOS F as identified in Table 2.*
- *Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.*

##### LOS E

The significance criterion for signalized intersections identified in Table 2 allows an increase in the overall delay at an intersection operating at LOS E of two seconds. This is consistent with the capacity limit contained in the SANDAG's CMP and guidelines established by the City of San Diego. A delay of two seconds is a small fraction of the typical cycle length for a signalized intersection that ranges between 60 and 120 seconds. The likelihood of increased queues forming due to the additional two seconds of delay is low. Therefore, an increased wait time of two seconds, on average, would result in changes to traffic flow that would not be noticeable to the average driver. Therefore the significance guideline for intersections operating at LOS E is 2 seconds.

##### LOS F

The primary significance criterion for signalized intersections operating at LOS F conditions was based upon increased delay at the intersection. Under LOS F congested conditions, small changes and disruptions to the traffic flow to signalized intersections can have a greater effect on overall intersection operations when compared to other LOS conditions. In order to better account for potential effects of increased traffic at signalized intersections operating at LOS F, a more stringent guideline was established when compared to signalized intersection operating at LOS E. A significance guideline of an increased delay of 1 second was established for signalized intersections operating at LOS F. An increase in the overall delay at an intersection of one second, on average, would result in changes to traffic flow that would not be noticeable to the average driver. Therefore the significance guideline for intersections operating at LOS F is 1 second.

Signalized intersections operating at LOS F also have the potential for substantial queuing at specific turning movements that may detrimentally effect overall intersection and/or road segment operations. Thus, an increase of peak hour trips to a critical move was also established as a secondary significance criterion for signalized intersections. A critical movement would be a movement or a lane at an intersection that is experiencing queuing or substantial delay and is affecting the overall operation of the



intersection. The increase in peak hour trips to a critical move is a measurement of how many cars can be added to an existing queue. The addition of more than five trips (peak hour) per critical movement will normally be considered a significant impact. This significance criterion was selected because the five or less additional trips spread out over the peak hour would not significantly increase the length of an existing queue and would not be noticeable to the average driver (5 peak hour trips equals one trip every 12 minutes or 720 seconds).

For LOS F intersections, the 5 peak hour trips to a critical movement would not be noticeable to the average driver since the one additional trip during the 12 minute interval on average would clear the traffic signal cycles well within the 12 minute period. It should also be noted that if the 5 additional peak hour trips arrived at the same time these trips would also clear the traffic cycle and existing queue lengths would be re-established.

#### **4.2.2 Unsignalized**

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant impact to an unsignalized intersection as listed in Table 2 and described as text below:

- *The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D, or*
- *The additional or redistributed ADT generated by the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or*
- *The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F, or*
- *The additional or redistributed ADT generated by the proposed project will add 6 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F, or*
- *Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.*

The operating parameters and conditions for unsignalized intersections differ dramatically from those of signalized intersections. Very small volume increases on one

leg or turn and/or through movement of an unsignalized intersection can substantially affect the calculated delay for the entire intersection. As noted in Table 2 on page 15, significance criteria for unsignalized intersections are based upon a minimum number of trips added to a critical movement at an unsignalized intersection.

#### **LOS E**

The significance guidelines for unsignalized intersections identify a minimum number of trips added to a critical movement at an unsignalized intersection. Since the operations of unsignalized intersections under congested conditions are heavily influenced by traffic volume increases on critical moves, the significance guidelines for unsignalized intersections were based upon the number of trips added to a critical movement. This guideline directly relates to the number of vehicles that can be added to an existing queue that forms at the intersection. A significance criteria of (21) twenty-one or more trips (peak hour) per critical movement was used for LOS E conditions. Although delays drivers experience under LOS E condition may be noticeable, they are not yet considered unacceptable. Twenty trips spread out over the peak hour would not likely cause the intersection delay or existing queue lengths to become unacceptable. The twenty trips (peak hour) would not be noticeable to the average driver.

The operations of unsignalized intersections under congested conditions are heavily influenced by traffic volume increases on critical moves. Therefore, the significance guidelines for unsignalized intersections are based upon the number of peak hour trips added to a critical movement at that intersection. This guideline examines the number of vehicles that may be added to an existing queue that forms at the intersection by the additional traffic generated by a project. In LOS E situations, the delays that drivers experience are noticeable, but are not considered excessive. A peak hour increase of twenty trips to the critical movement of an unsignalized intersection would be, on average, one additional car every 3.0 minutes or 180 seconds. Assuming the average wait time for a vehicle in the critical movement queue is less than 3.0 minutes, which is typical for LOS E condition, this would not be noticeable to the average driver and would not be considered a significant impact.

#### **LOS F**

For LOS F conditions, a significance level of 6 or more trips (peak hour) per critical movement was used. Five trips or less spread out over the peak hour would not significantly increase the length of an existing queue and would not be noticeable to the average driver. For example, 5 trips spread out over an hour would be one car every 12 minutes. This typically exceeds the average wait time in the queue and would not be noticeable to the average driver.

### **4.3 Two-Lane Highways**

This section provides level of service impact guidelines for State highways and County arterials operating as two-lane highways.



Several designated County Circulation Element Roads are State highways that are managed and maintained by Caltrans. These highways include State Route 67, State Route 76, State Route 78, State Route 79 and State Route 94 and within the unincorporated area of the County most of these routes operate as two-lane highways. Caltrans has prepared a "Guide for the Preparation of Traffic Impact Studies" that should also be referenced when evaluating traffic impacts to the above Circulation Element Roads that are under the jurisdiction of Caltrans. Also, Caltrans District 11 local office should be consulted early to adequately scope the traffic study and ensure potential local district issues in the traffic impact study are addressed. While the "Guide for the Preparation of Traffic Impact Studies" provides guidance for scoping a traffic study to assess impacts on Caltrans facilities, it does not provide specific guidelines for determining when a significant traffic impact occurs; hence, the development of the following significance guidelines for two-lane highways.

In addition to the State Routes identified above, several County Circulation Element Roads, although designated as arterials, operate as two-lane highways. These include roadways that have passing opportunities for 40% or more along the length of the roadway and/or have few/limited access points and intersections along the length of the roadway. Examples would include sections of Old Highway 80, Old Highway 395 and Del Dios Highway. The Highway Capacity Manual (HCM) includes analysis criteria for assessment of LOS for two-lane highways. Section 2.2 of the County of San Diego's "Transportation and Traffic Report Format and Content Requirements" states that "The Director of Public Works may, based upon a review of the operational characteristics of the roadway, designate that a HCM analysis be used to determine the LOS for a two-lane County arterial in lieu of the LOS table provided in the County of San Diego Public Road Standards." Level of service tables for two-lane highways have also been established by the County of Riverside and the County of Sacramento.

#### 4.3.1 Signalized Intersection Spacing Over One Mile

This section provides LOS impact significance levels for State highways and County arterials operating as two-lane highways with signalized intersection spacing over one mile. County arterials were addressed in section 4.1 and Table 1, however, those that operate as two-lane highways would have higher project contribution amounts and different LOS E and LOS F levels and are treated in this section.

**Table 3**  
**Measures of Significant Project Impacts to Congestion: Allowable Increases**  
**on Two-lane Highways with Signalized Intersection Spacing Over One Mile**

Level of Service	LOS Criteria	Impact Significance Level
LOS E	> 16,200 ADT	>325 ADT
LOS F	> 22,900 ADT	>225 ADT
<b>Note:</b> Where detailed data are available, the Director of Public Works may also accept a detailed level of service analysis based upon the two-lane highway analysis procedures provided in the Chapter 20 Highway Capacity Manual.		

Two-lane highways with intersection spacing over one mile have minimal side friction and conform to the HCM assumptions for two-lane highways. Level of service criteria for LOS E and LOS F are provided in Table 3 based upon criteria established with the Counties of Riverside and Sacramento and concurred upon by Caltrans-District 11. These criteria are appropriate for use for most projects with the potential to affect two-lane highways, as road conditions for two-lane highways in these Counties are similar to those in the County of San Diego. The ADT based guidelines should be the first applied method of analysis, however, County staff may allow the use of HCM Chapter 20 methodology (average travel speed and/or percent time spent following) to provide a more detailed evaluation and to determine the overall level of service in certain cases, with the approval of the Director of Public Works. Where impacts to State Highways are involved, consultation with Caltrans is recommended.

### **LOS E**

Impact significance levels are provided in Table 3 for two-lane highways with signalized intersection spacing over one mile. The first impact significance level addresses impacts from new development (both direct and cumulative impacts) on an LOS E road. In this scenario a significant impact would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 325. For most discretionary projects, the 325 ADT level would generate less than 35 peak hour trips. On average, during peak hour conditions, this would be only one additional car every 1.7 minutes. The addition of 325 ADT would, in most cases, not be noticeable to the average driver on a two-lane highway which has higher speeds and reduced side friction compared to a typical arterial. The additional 325 ADT, therefore, would not constitute a significant impact on a two-lane highway operating at LOS E; however, the addition of more than 325 ADT would generally result in a significant impact.

### **LOS F**

The second impact significance guideline concerns roadways presently operating at LOS F (for a 2-lane highway LOS F would not occur until ADT exceeds 22,900 trips per day. Under LOS F congested conditions, small changes and disruptions to the traffic flow on County Circulation Element Roads can have a greater affect on traffic operations when compared to other LOS conditions. In order to better account for potential effects of increased traffic on LOS F roads, a more stringent guideline was established when compared to that for LOS E. The guideline for determining significance from new development (both direct and cumulative impacts) on a LOS F road would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 225. For most discretionary projects, the 225 ADT level would generate less than 25 peak hour trips. On average, during peak hour conditions, this would be only one additional car every 2.4 minutes. The addition of 225 ADT would, in most cases, not be noticeable to the average driver on a two-lane highway which has higher speeds and reduced side friction compared to a typical arterial. The addition 225 ADT or less would therefore not constitute a significant impact on a two-lane highway operating at LOS F. However, the addition of more than 225 ADT would be considered a significant impact.



### 4.3.2 Signalized Intersection Spacing Under One Mile

This section provides level of service impact guidelines for State highway segments and County arterials operating as two-lane highways with signalized intersection spacing under one mile. Typical examples of this type of roadway are those segments of two lane highways that traverse town centers. Similar to the experience of drivers in urban areas with closely spaced intersections, the functionality of two-lane highway conditions with signalized intersections spacing under one mile becomes constrained not due to the segment capacity but the intersection operations. Therefore the assessment of operations of intersections on two-lane highways shall be guided by a Level of Service standard. Level of Service for purposes of this significance guideline is based upon the overall intersection operations – similar to Urban Street analysis in Chapter 15 Highway Capacity Manual. For determining impact significance at the signalized intersection, Table 4 “Measures of Significant Project Impacts to Congestion on Intersections Allowable Increases on Congested Intersections” may be used as summarized below:

**Table 4**  
**Measures of Significant Project Impacts to Congestion: Allowable Increases**  
**on Two-lane Highways with Signalized Intersection Spacing Under One Mile**

Level of Service	Signalized
LOS E	Delay of 2 seconds or less
LOS F	Delay of 1 second, or 5 peak hour trips or less on a critical movement
<b>Notes:</b> 1. A critical movement is an intersection movement (right turn, left turn, through-movement) that experiences excessive queues which typically operate at LOS F. 2. By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact. 3. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.	

The second impact significance guideline (Table 4) concerns two-lane highways with signalized intersection spacing less than 1 mile. Two-lane highways with intersection spacing less than 1 mile operate similar to urban streets as identified in the HCM. Per the HCM, level Urban Streets have lower speeds with levels of service most characterized by the operation of the intersections along the highway/street. For two-lane highways with intersection spacing less than 1 mile, the level of service will be determined to be that of the intersections along the highway. Impacts to the highway will be determined by evaluating the intersection impact criteria identified in Table 4.

Impacts related to operational features on two-lane highways will be evaluated on a case-by-case basis based upon traffic flow patterns, geometrics, available sight distance, accident histories, and other factors. Coordination with County staff and Caltrans is recommended regarding any additional operational analysis that may be necessary.

#### 4.4 Ramps

Additional or redistributed ADT generated by the proposed project may significantly increase congestion at a freeway ramp. Caltrans' "Guide for the Preparation of Traffic Impact Studies" states that an operational analysis based upon Caltrans' Highway Design Manual should be used in the evaluation of ramps and that Caltrans' Ramp Metering Guidelines should be used in the preparation of the operational analysis. However, specific criteria for the determination of an impact at a ramp are not provided in the above documents.

The CMP includes guidelines for the determination of traffic impacts at a ramp. These guidelines are summarized in Table 5. Table 5 may be used as a guide in determining significant increases in congestion on ramps and for identifying conflicts with the congestion management program. Other factors that may be considered include ramp metering, location (rural vs. urban), ramp design, and the proximity of adjacent intersections. Coordination with Caltrans and the local jurisdiction should be conducted to determine appropriate impact criteria for the specific ramps being assessed.

#### 4.5 Congestion Management Program

Projects that generate over 2,400 ADT or 200 peak hour trips, must comply with the traffic study requirements of SANDAG's Congestion Management Program. Trip distributions for these projects must also use the current regional computer traffic model. Projects that must prepare a CMP analysis should also follow the CMP traffic impact analysis guidelines. These guidelines are summarized in Table 5.

**Table 5**  
**Measure of Significant Project Traffic Impacts for**  
**Circulation Element Roads, Signalized Intersections, and Ramps**

Level of Service With Project	Allowable Change Due to Project Impact						
	Freeways		Roadway Segments*		Intersections**	Ramps**	Ramps with >15 min. delay
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)	Delay (min.)
E & F	0.01	1	0.02	1	2	-	2
* For County arterials, which are not identified in SANDAG's Regional Transportation Plan and Congestion Management Program as regionally significant arterials, significance may be measured based upon an increase in average daily trips. The allowable change in ADT due to project impacts in this instance would be identified in Table 1.							
** Signalized Intersections							
*** See the Report Format and Content Requirements for guidance on ramp metering analysis.							
<u>KEY</u>							
V/C = Volume to Capacity ratio							
Speed = Speed measured in miles per hour							
Delay = Average stopped delay per vehicle measured in seconds, or minutes							
LOS = Level of Service							
ADT = Average Daily Trips							



#### **4.6 Hazards Due to an Existing Transportation Design Feature**

Many roadways and intersections in the County were designed and constructed prior to the adoption of current road design standards. The design of the roadways and intersections that were able to handle lower traffic volumes, may pose an increased risk if traffic volumes substantially increase along the road segment or at the intersection as a result of the proposed project. Increased traffic generated or redistributed by a proposed project may cause a significant traffic operational impact to an existing transportation design feature. Therefore, it is necessary to evaluate potential hazards to an existing transportation design feature.

The determination of significant hazards to an existing transportation design feature shall be on a case-by-case basis, considering the following factors:

- Design features/physical configurations of access roads may adversely affect the safe movement of all users along the roadway.
- The percentage or magnitude of increased traffic on the road due to the proposed project may affect the safety of the roadway.
- The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers, may result in conflicts with other users or stationary objects.
- Conformance of existing and proposed roads to the requirements of the private or public road standards, as applicable.

#### **4.7 Hazards to Pedestrians or Bicyclists**

Many roadways and intersections in the County do not currently have pedestrian or bicycle facilities. The roadways and intersections designed prior to adoption of current road standards may have conditions that may pose an increased risk if traffic volumes, pedestrian volumes, or bicycle volumes substantially increase along the road segment or at the intersection, as a result of the proposed project. Increased traffic generated or redistributed by a proposed project may cause a significant traffic operational impact to pedestrians or bicyclists. Therefore, it is necessary to evaluate potential hazards to pedestrians or bicyclists.

The determination of significant hazards to pedestrians or bicyclists shall be on a case-by-case basis, considering the following factors:

- Design features/physical configurations on a road segment or at an intersection that may adversely affect the visibility of pedestrians or bicyclists to drivers entering and exiting the site, and the visibility of cars to pedestrians and bicyclists.

- The amount of pedestrian activity at the project access points that may adversely affect pedestrian safety.
- The preclusion or substantial hindrance of the provision of a planned bike lane or pedestrian facility on a roadway adjacent to the project site.
- The percentage or magnitude of increased traffic on the road due to the proposed project that may adversely affect pedestrian and bicycle safety.
- The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers that may result in vehicle/pedestrian, vehicle/bicycle conflicts.
- Conformance of existing and proposed roads to the requirements of the private or public road standards, as applicable.
- The potential for a substantial increase in pedestrian or bicycle activity without the presence of adequate facilities.

#### **4.8 Alternative Transportation**

Alternative transportation (cycling, walking, and transit use) is addressed in the County's General Plan Public Facilities Element (PFE). The County's stated objective for alternative transportation is addressed by the PFE, Objective 4. Objective 4 asks for a "Reduction in the demand on the road system through increased public use of alternate forms of transportation and other means." Pursuant to Objective 4, Policies 4.1 – 4.4 establish a means for the County to meet the objective. As such, if a proposed project is not in conformance with the applicable alternative transportation policies in the PFE, a significant conflict with the County's alternative transportation policies may occur.

Excerpts from the Public Facility Element

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# Part XII

## Public Facility Element

### San Diego County General Plan

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Adopted  
March 13, 1991  
Amended  
January 12, 2005  
GPA 04-010

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Section 2 – Coordination Among Facility Planning, Financing Programs and Land Use Planning .....	XII-2-1
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Section 12 – Wastewater .....	XII-12-1
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Section 19 – County Administration .....	XII-19-1
Section 20 – Facilities Located in City Spheres .....	XII-20-1
Section 21 – County Trails .....	XII-21-1

This Element was partially funded through the Community Development Block Grant program

## CERTIFICATE OF ADOPTION

I hereby certify that this is the text, of the **Public Facilities Element**, Section I, Part XII of the San Diego County General Plan, as amended by General Plan Amendment (GPA) 04-010, and that it was considered by the San Diego County Planning Commission on the 15th day of October 2004 and approved the San Diego County Board of Supervisors on the 12th day of January 2005.

Attest: Gary L. Pryor, Director  
Department of Planning and Land Use

### Text

Adopted March 13, 1991, as part of GPA 90-FE  
Latest Amendment January 12, 2005, as part of GPA 04-010

A complete history of the amendments to this Element, both map and text, is available at the Department of Planning and Land Use.



## SECTION 4. TRANSPORTATION

### OVERVIEW

An efficient integrated transportation system promotes the movement of people and goods in a timely and orderly fashion. Transportation facilities located within the County include freeways and highways, streets and roads, public transit, bikeways and aviation facilities.

While San Diego County's transportation system offers commuters a range of choices, the automobile is by far the most popular and most frequently chosen method of transportation in the County. During the 10 year period from 1978 to 1988, when population increased by 22%, licensed drivers in the region increased by 40% (to 1,612,000 drivers), auto registrations increased by 64% (to 1,348,000 registrations) and weekday vehicle miles of travel increased by 63%. During this same period, increases in freeway facilities (11%) and local street and road mileage (16%) did not keep up with the increasing demand.<sup>4</sup>

Transit service also plays an important role in the transportation system within the County. Public transit provides a relatively inexpensive and efficient method of transportation, and is the predominant form of transportation for many people, especially students, low income persons and the elderly. The remaining modes of transportation such as air, rail, bicycle and walking represent a small but important amount of total trips within the County.

The San Diego Association of Governments (SANDAG) is designated by both the state and federal governments as the agency responsible for regional transportation planning. In this role, SANDAG prepares a Regional Transportation Plan (RTP) for the San Diego region. The RTP is updated approximately every two years and includes goals and objectives for all forms of transportation facilities in the County. The road network in the County Circulation Element is coordinated with the freeway and highway system presented in the RTP. By working cooperatively and using common information and projections, the County and SANDAG coordinate their plans to provide a regional transportation system that is efficient, safe and convenient.

This section is intended to supplement the Circulation Element of the General Plan. The Circulation Element is a schematic representation of the transportation corridors and widths required at ultimate development of the County General Plan. It also delineates a bikeway system intended to link bicycle traffic within and between communities.

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<sup>4</sup> San Diego Association of Governments, 1989 Regional Transportation Plan, p. 55-56.

## **EXISTING CONDITIONS**

The County of San Diego is responsible for ensuring the planning, development and maintenance of transportation facilities located in the unincorporated area. In addition, the County works closely with other agencies, including SANDAG, the Metropolitan Transit Development Board (MTDB), the North San Diego County Transit Development Board, and the California Department of Transportation (CALTRANS) to aid in the planning of transportation facilities and services throughout the region.

## **ROAD AND BRIDGE FACILITIES**

Travel by bicycle, car or public transit utilizes roads and bridges. With the increasing population and automobile usage in San Diego County, the amount of traffic on the roads has increased. Expanding the County road and bridge network is a continual process. In 1990, there were approximately 1,864 miles of County-maintained roadways in the unincorporated area, including both Circulation Element and non-Circulation Element roads. Additional roads in the unincorporated area that are not constructed or maintained by the County include freeways, highways and private roads.

The County Circulation Element is divided into two parts: maps and a written text. The nine Circulation Element maps covering the entire County depict the major roads and bicycle routes in the County, both existing and proposed. This is the County's plan for the location and size of roads that will be required in the future to serve proposed land uses in the unincorporated area. The size of each road varies from 2 to 6 lanes based on the forecasted number of trips to be made on the road.

The vehicular capacity of a roadway is measured by a Level of Service scale. With six tiers (A thru F), the level of service for a particular road is a measure of speed and travel time, traffic interruptions or restrictions, freedom to maneuver, safety, driver comfort and convenience, and economy. Level of Service "A" is identified as free vehicular flow with few conflicts or interruptions, while "F" is identified as highly congested stop-and-go with many vehicular conflicts and interruptions. Level of Service "C" is considered to be the desired service level on County roads.

The Circulation Element maps are important tools for preserving road rights-of-way and planning for needed road construction. As development occurs and creates the demand for additional roadways, the roads are constructed. The County Board of Supervisors approves updates to the Circulation Element maps as land use changes are approved. County transportation planning is coordinated with the cities in the region to ensure that region-serving roads common to multiple agencies are planned to meet the expected demand in all areas, and that widths and alignments are compatible.

Roads in the unincorporated area are constructed by both the County and by private property owners. The County builds needed roads to the extent that funds are available; however, the majority of the roads in the unincorporated area are constructed by private property owners as a condition of development. This includes roads within development projects, peripheral roads and off-site roads, if warranted by the demand generated by the development.

To support County road construction and maintenance, the County Department of Public Works operates 17 road maintenance stations. These stations serve as staging areas for road maintenance crews. Twelve borrow pits, 8 County owned and 4 leased, provide the paving and gravel materials needed to maintain the roadways. Figure 4-A shows the locations of the County road maintenance stations and borrow pits.

In addition to roads, the County also builds and maintains bridges in the unincorporated area. In October 1989 there were a total of 650 bridge or dip structures in the unincorporated area of the County, including 120 bridges with a span of 20 feet or more, 67 bridges with a span of less than 20 feet, 385 culverts, and 78 dip structures. These structures are located on both Circulation Element and non-Circulation Element roads.

Responsibility for the construction of bridge structures is borne by both developers and the County. The majority of the bridge structures are provided by the County; however, in some cases developers are required to build a bridge structure as a condition of development. The County contracts for the construction of bridges to private firms and assumes maintenance responsibility for them upon completion.

## **BICYCLE FACILITIES**

The mild year-round climate in the San Diego region makes the area ideal for the use of bicycles for transportation. Currently, there are over 230,000 bicycle trips made daily within the San Diego region on more than 450 miles of designated bikeways and other roadways. Increased costs for motorized travel, congested roads and highways and a greater emphasis on physical fitness have all contributed to greater bicycle ridership. Because of the growing demand for transportation by bicycle, increased attention is being focused on this mode of travel.

Bicycle use, however, has not increased at the rate projected in the 1985 SANDAG Regional Transportation Plan. SANDAG projected a 10% increase between 1985 and 1987, while actual ridership during this period increased by only 5%. Major reasons for the slower increase in ridership include inadequate funding for bikeway projects, which has resulted in a 50% completion rate of planned bikeway projects, and a lack of incentives to encourage bicycle ridership.

X11-4-3

FIGURE 4-A GOES HERE

X11-4-4



In the unincorporated area of San Diego County, there were a total of 70 miles of Bikeways in 1990. Of the 70 miles of Bikeways in the unincorporated area, Bike Lanes account for 68.5 miles, Bike Paths for 1.0 mile and Bike Routes for .5 miles. Definitions of Bikeways, Bike Lanes, Bike Paths and Bike Routes are contained in the Circulation Element. The Bicycle Network Map of the Circulation Element, in addition to showing existing Bikeways, maps over 300 miles of planned Bikeways that are not yet constructed.

Bicycle facilities in the unincorporated area are constructed by both developers and the County. Beginning in 1989, the County embarked on an aggressive program to expand the existing Bicycle Network. When improving property along roadways with planned Bikeways, the County requires the provision of Bikeways as part of the road improvements. State and Federal funding is being actively pursued to complete the remaining Bikeway segments.

In an effort to encourage bicycle ridership by both its employees and the general public, the County of San Diego has placed bicycle lockers at 14 County buildings and at regional transit centers. Currently, there are 59 lockers (holding 118 bicycles) at County buildings and a total of 20 additional lockers (holding 40 bicycles) in place at the Chula Vista and Oceanside Transit Centers. Bicycle racks and posts are also available.

## **TRANSIT FACILITIES**

The San Diego County Transit System provides public transportation services to the unincorporated area and to 14 of the region's 18 cities. Public transit planning is done on a regional basis by the Metropolitan Transit Development Board, the North County Transit District and SANDAG, with input from the County. The County Department of Public Works completes short-range transit plans and transportation improvement programs for the systems it operates.

The County Transit System utilizes six types of transit services in its effort to provide a functional and responsive transit system. These are Suburban Fixed Route, Commuter Express Bus, Rural Lifeline service, Airporter service, Elderly and Disabled Dial-A-Ride service and General Public Dial-A-Ride services. Through these programs, the County Transit System serves almost two million passengers annually. Table 4-1 describes the different types of transit service and lists ridership levels for FY 89-90. All transit services offered by the County Transit System are provided by private contractors. In 1990, there were 10 contracted transit service providers. Seven contractors use their own vehicles, while the remaining three operate County-owned vehicles. In all cases, County Transit Service contractors provide vehicle maintenance and storage facilities.

As a means of integrating different transportation systems and types, increasing ridership and increasing accessibility, the County provides transit centers. Transit

X11-4-5



centers generally serve a number of routes and have over 500 boardings per day. The Transportation Development Act allows the County to build transit centers anywhere in the County. Once the center is built, the

X11-4-6

**TABLE 4-1  
SAN DIEGO COUNTY TRANSIT SERVICE FY 1989-1990**

SERVICE TYPE	DESCRIPTION OF SERVICE	NO. OF FIXED ROUTES	ESTIMATED ANNUAL PASSENGERS
SUBURBAN FIXED ROUTE SERVICE	Fixed bus routes serving the cities and communities of La Mesa, Lemon Grove, El Cajon, Santee, Spring Valley, Rancho San Diego, Lakeside and Alpine. All of the routes offer connections to the San Diego Trolley and to San Diego Transit routes.	8	1,397,000
COMMUTER EXPRESS BUS	Fixed bus routes providing round trip service from Poway to downtown San Diego, Escondido to downtown San Diego and Oceanside to downtown San Diego. Connections to other transit services are also available along these routes.	3	170,000
POWAY TRANSIT SERVICES	There are three different services provided in the Poway area. The first service consists of fixed bus routes serving Poway with connections to San Diego Transit routes. Second is the Poway Dial-A-Ride, which provides demand responsive service to the general public. Third is the Poway Airporter, which is a demand-responsive service operating between Poway and the San Diego International Airport-Lindbergh Field.	3, N/A, N/A	254,700
RURAL BUS SERVICE	Fixed bus routes providing service from the rural eastern areas of the County to the cities of El Cajon and La Mesa with connections to San Diego Transit, the San Diego Trolley and other County Transit System routes.	7	16,800
ELDERLY and DISABLED DIAL-A-RIDE	Demand-responsive dial-a-ride providing service to elderly and disabled clientele in the cities and communities of El Cajon, La Mesa, Lemon Grove, Spring Valley, Lakeside and Alpine.	N/A	46,000
SPRING VALLEY DIAL-A-RIDE	Demand-responsive dial-a-ride for the general public serving the community of Spring Valley.	N/A	41,000

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transit operator serving the center generally is responsible for facility maintenance and upkeep. In 1990, the County-owned, either solely or in partnership with other jurisdictions, the following four transit centers:

- o Oceanside -- County owned
- o Escondido -- Joint ownership between the County and North County Transit
- o San Diego State University -- County-owned
- o Chula Vista Bayfront Trolley Station -- Joint ownership between the County and the City of Chula Vista.

Figure 4-B shows the locations of both existing and proposed County-owned transit centers. Other existing transit centers constructed by the County but owned by other jurisdictions are:

- o University Towne Center
- o Vista

## **AVIATION FACILITIES**

Aviation facilities in San Diego County include 40 airports and 39 heliports. Of these facilities, 8 of the airports and 3 of the heliports (located at county airports) are owned by the County. One of the airports, Fallbrook, is leased and operated by a private group. Lindbergh Field, San Diego's major airport serving approximately 11 million passengers per year, is owned and operated by the San Diego Unified Port District and is not discussed in this Element. Figure 4-C shows the locations of all County-owned aviation facilities.

Public airports typically prepare an Airport Master Plan for the ultimate development of the airport's facilities. Additionally, State law requires each public airport to adopt a Comprehensive Land Use Plan (Public Utilities Code Section 21670 et seq.). These plans are prepared for the area surrounding each facility to ensure compatibility between adjacent land uses and the operation and/or expansion of the airport. The Comprehensive Land Use Plan also addresses noise levels, maximum building heights in surrounding areas and other public safety issues.

The 8 airports and 3 heliports that are owned by the County cover a combined total of 2,254 acres. Currently, there are approximately 1,562 private aircraft based at these facilities that, when combined with visiting aircraft, conduct approximately 534,921 operations per year (an operation is defined as one takeoff or one landing). Table 4-2 identifies the County-owned aviation facilities and lists the size and usage levels for each facility.

FIGURE 4-C GOES HERE

XII-4-9

MAP TO GO HERE

XII-4-10



**TABLE 4-2  
COUNTY OWNED AVIATION  
FACILITIES IN 1989**

NAME	NO. OF BASED AIRCRAFT <sup>1</sup>	TOTAL ACRES	ANNUAL NO. OF OPERATIONS
Agua Caliente Springs Airport	1	20	300 <sup>2</sup>
Borrego Valley Airport	31	198	41,620 <sup>3</sup>
Fallbrook Community Airport	77	290	1,995 <sup>3</sup>
Gillespie Field Airport and Heliport	635	743	174,599 <sup>4</sup>
Jacumba Airport	7	131	2,500 <sup>2</sup>
McClellan Palomar Airport and Heliport	422	486	206,692 <sup>4</sup>
Ocotillo Airport	0	344	200 <sup>2</sup>
Ramona Airport and Heliport	220	342	113,184 <sup>2</sup>
<b>TOTAL(S)</b>	<b>1,393</b>	<b>2,554</b>	<b>541,090</b>

<sup>1</sup> Based Aircraft: All figures are for 1989 except Fallbrook (1987).

<sup>2</sup> 1989 estimated number.

<sup>3</sup> 1987 number.

<sup>4</sup> 1988 number.

## **EXISTING FACILITY LEVELS**

### **STREETS AND ROADS FACILITY LEVEL**

The existing street and road system in the unincorporated County is generally operating at an acceptable level of service; a majority of the streets and roads experience little or no congestion. Most of the congestion that does exist in the unincorporated area takes place on major arterials during peak-hour traffic periods. Commuters approaching freeways to go to work cause congestion on the main arterials and also add to the congestion on the region's freeways in the more urbanized areas. As urban land uses have been extended outward to the more rural areas, and commuters drive greater distances to their workplaces, the amount of congestion on the region's freeways and highways has increased.

### **BICYCLE FACILITY LEVEL**

While the Bicycle Network Map of the Circulation Element shows almost 400 miles of proposed bikeways in the unincorporated area, by 1990 only 70 miles of bikeways had been constructed. This level is not considered adequate to meet the needs of the unincorporated area.

### **TRANSIT FACILITY LEVEL**

As the population of the San Diego region has grown, the use of transit services has increased. In addition to the completed transit centers, the following centers are planned for development by the County:

- o County Administration Center
- o Carlsbad Transit Center
- o Grossmont College Transit Center
- o Spring Valley Transit Center
- o Southwestern College Transit Center
- o Santee Transit Center
- o Oceanside Transit Center Phase II
- o Bayfront Trolley Station Phase II

In addition, a transit center is planned for Rancho San Diego. This center is being built by a private developer. Analysis of potential additional transit center sites will occur prior to completion of those currently planned.

## **AVIATION FACILITY LEVEL**

Currently, the County's general aviation demands are being met by existing facilities. In 1989, there were 1,352 aircraft based at the County airports, and a combined total of 561,511 take-offs and landings conducted at the airports.

## **FUNDING METHODS**

Funding transportation improvements in the County is becoming increasingly difficult. Previously used funding sources have in large part either been abolished or severely curtailed. Hardest hit have been funds available for routine operation and maintenance of existing facilities. As a result, funds that were previously available for construction of new facilities are now being channeled towards the operation and maintenance of existing facilities. In order to meet the needs of a growing County, new and alternate funding sources have been developed. These new sources, combined with the traditional funding mechanisms, still do not meet the entire transportation funding needs in the County. Some funding sources are exclusive to one type of transportation, while others are available for several modes.

## **STREETS AND ROADS FUNDING**

### **State Subventions**

The State provides transportation funding to the County through several programs. A State tax on gasoline provides funds which can be used for operation and maintenance costs or for the construction of roads, bridges and bikeways. The County also receives funds from the Streets and Highway Code, Section 2104(d) based on the ratio of registered vehicles throughout the County to the total vehicle registration throughout the State. These funds can be used for road construction.

### **Fines and Forfeitures**

A portion of the revenues collected by the municipal courts for Vehicle Code violations (Vehicle Code Sections 42201 and 42210.5) are received by the County Road Fund for use in road maintenance and construction.

### **Development Exactions**

Within the County, developers are generally required to construct all roads within their projects. In some cases developers may also be required to make off-site improvements to roads to mitigate the traffic impacts of the development.



### Transportation Sales Tax (TransNet)

The passage of Proposition A (TransNet) in November of 1987, which raised the sales tax by one-half cent, is expected to provide the region with approximately \$2.25 billion over the 20 year lifespan of the tax. Approximately \$750 million will be generated for improvements to the each of the following: the region's highways, local streets and roads, and transit. From 1990 to 1995, the County will receive approximately \$56.7 million dollars in TransNet funds for local streets and roads, to expand and improve the existing road system in the unincorporated area. Additionally, \$1 million per year will be provided for the construction of bikeways throughout the region. The amount of TransNet funding received by the County and other jurisdictions each year is determined by SANDAG. SANDAG reviews TransNet funding requests in the region and determines the projects to be funded and the timing of funding.

### Bridge and Thoroughfare Fee

A fee for bridges and thoroughfares is authorized by Government Code Section 66484 et seq. This statute authorizes the County to institute a fee to be applied to all new development in an identified area of benefit to offset the construction or expansion costs of planned Circulation Element roads, bridges and bikeways needed to serve the development.

### Federal and State Grants

In FY90-91 the County received funding through three grant programs for use on transportation facilities: \$500,000 from the Community Development Block Grant, and \$2.5 million from the Federal Highway Administration. The County is also eligible to receive funds under the Combined Road Plan Program, which was created with the consolidation of the Federal Aid-Urban, Federal Aid-Secondary and Bridge Replacement Programs.

### Assessment Districts

The Improvement Act of 1911 and the Municipal Improvement Act of 1913 enable the County to establish assessment districts to finance the construction or acquisition of public improvements, including roads and bridges, through the sale of bonds. The County can issue bonds to finance public improvements using the Improvement Act of 1911 or the Improvement Bond Act of 1915. Bonds are retired through assessments levied on properties receiving benefit from the improvement.

Prior to 1977 assessment districts were used extensively for both large and small scale projects. However, with the passage of Proposition 13, the use of assessment districts in the County to finance transportation projects decreased dramatically. Between 1977 and 1989, there were no assessment districts formed for the purpose of funding

transportation projects. However, in 1989, the formation of 4 assessment districts for transportation improvements in large-scale projects were being processed by the County.

## **AIRPORT FUNDING**

### Federal and State Funding

Federal and State grants for public airports are available for the design and construction of aviation related projects that have been recommended in an airport master plan or approved on an airport layout plan. Grant funds can also be obtained for the preparation of planning documents, such as airport master plans. Grant funds typically cover 80 to 90 percent of the total project cost. Grant funding is generated from fuel taxes, ticket surcharges and aircraft registration fees levied upon users of aviation facilities.

### Lease Revenues

Another source of revenue for aviation facilities is the income earned from leased properties at County Airports. These revenues are used for capital improvements and maintenance at the eight County airports.

## **TRANSIT FUNDING**

### Federal and State Funds

Transit center funding is available from the Transportation Development Act, and through grants from Combined Road Plan<sup>5</sup>, State Transit Capital Improvement Program (TCI) and State Inter-modal sources. Grant funding is sought and utilized whenever available to supplement other sources.

### Development Exactions

The County may require developers to construct transit facilities if their projects cause a need for additional or expanded transit service.

### Transportation Sales Tax

The County Transit System is receiving approximately \$130,000 per year from TransNet to subsidize elderly and disabled services and senior fares.

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<sup>5</sup> Combined Road Plan funds used for transit center development are received from local jurisdictions that will benefit from the transit center.



## **BICYCLE FUNDING**

### **Developer Exactions and Contributions**

Many of the bikeways that are constructed in the unincorporated area are built by property owners as a condition of development. When a project is located on a roadway designated as a bikeway in the Circulation Element, the developer is required to construct the bikeway that abuts his property.

### **Transportation Sales Tax**

The collection of the transportation sales tax (TransNet) is providing the San Diego region with \$1 million per year (for 20 years) for the improvement and expansion of bicycle facilities. In FY89-90, the County received \$210,000 from TransNet to fund the development of additional bikeways and related facilities in the unincorporated area.

### **Federal and State Funds**

State Transportation Development Act Funds provide approximately \$1 million per year to the region for bicycle facility improvements within road rights-of-way. In FY89-90 the County share of this money was \$460,000. SANDAG reviews all of the projects requesting funding from this source and determines which will be funded. Funds from the State Bike Lane Account are available on a competitive basis for bicycle facility improvements serving commuter cyclists. The maximum amount that an agency can be granted in one year from this source is \$90,000.

## **ISSUES**

- 1. Increases in the amount of automobile use have resulted in increased congestion on the region's roadways.**

**Discussion:** The dramatic rise in automobile use has far surpassed the ability of the County and other jurisdictions to upgrade and maintain the highway and road system. As the number of vehicles on the roadways has increased, the expansion of existing roadways and the construction of new roadways has not kept pace. Between 1978 and 1988, automobile registrations increased by 64% while increases in local street and road mileage only rose by 16%. As a result, certain roadways are functioning at a Level of Service "E" or "F" on a routine basis.

A LOS "C", which allows for stable traffic flow with room to maneuver, is a generally accepted level to strive for in new development. At this level, traffic generally flows smoothly, although freedom to maneuver within the roadway is somewhat restricted and lane changes require additional care.

However, there are some cases where development cannot achieve a LOS "C" on off-site roadways. For instance, there are areas where the existing development pattern precludes the addition of lanes or other mitigation or when the community is opposed to certain improvements to maintain a LOS "C". Additionally, there are existing roadways in the County that are currently operating below a LOS "C". Such cases are currently exceptions and generally occur when there is insufficient right-of-way to expand or modify a roadway or when the existing development in the area has generated more traffic than anticipated. In these cases a Level of Service "D" is acceptable on off-site roadways. At this level, small increases in flow cause substantial deterioration in service. Freedom to maneuver is limited and minor incidents can cause substantial interruption in the traffic flow.

When the roadway system reaches a LOS "E" or "F", or new development would push it to LOS "E" or "F", new development should not be approved unless the project can mitigate the LOS "E" or contribute a fair share to a program to mitigate the project's impacts, unless a statement of overriding findings can be made.

In order to control the amount of traffic on the roadways, and subsequently the amount of congestion, it is necessary to apply the LOS measurement to all roads that are impacted by a proposed project. The effect of a project on the road system varies from project to project. Due to the size and type of project, the type and capacity of roads serving the project, the amount of traffic generated by the development and the existing development pattern, the impact will vary from one project to another. To apply a LOS standard to only major or larger capacity roads or to within a specified geographic distance of a project could result in an inadequate review of the impacts of a project and create the potential for increased congestion. Therefore, project impacts should be assessed on a case-by-case basis.

**2. New development has a regionwide impact on transportation facilities extending beyond jurisdictional boundaries.**

**Discussion:** New development, regardless of the type, results in additional trips being taken on the region's transportation facilities. When development occurs, the automobile trips generated by the development are not restricted to the area immediately surrounding the development. Rather, the trips are made throughout the region. These trips not only increase the level of congestion on the transportation facilities in the community where the development is located, but also on the facilities in surrounding jurisdictions, and throughout the entire region.

**3. The increased reliance on personal vehicles has resulted in increased congestion on the region's roadways and highways.**

**Discussion:** A majority of the trips taken throughout the region is made in personal vehicles occupied by one person. This reliance on personal vehicles has contributed greatly to increased congestion and longer delays on the region's roads and highways.

Efforts to reduce the congestion on the roadways have traditionally focused on the construction of new roads or the expansion of existing roads. Recently, agencies have been developing Transportation Demand Management (TDM) programs to better manage travel demand during the busiest travel times and to improve the efficiency and effectiveness of the region's transportation systems. To achieve these goals, TDM includes the development and implementation of programs designed to influence traveler behavior by modifications in travel mode, frequency, time, route, vehicle occupancy, direction, trip length or facility assignment<sup>6</sup>.

Additionally, legislation adopted in 1990 (Propositions 108 and 111) addressed the traffic congestion problem. The measures provide additional funding for transportation improvements, but also place additional requirements on the receipt of these funds. The legislation requires the preparation and adoption of a Congestion Management Program (CMP) for the San Diego region. One of the requirements of the CMP is that Level of Service standards be adopted for all state highways and for principal arterials. The LOS can be set at "E" or the current level, whichever is lower. Failure to meet this standard could result in the withholding of transportation improvement funds.

**4. The need for transportation improvements has increased faster than funds have been made available to finance the improvements.**

**Discussion:** The large-scale rapid growth experienced throughout the region in the 1980s resulted in an increased burden on the region's transportation facilities. Funding needed to expand the facilities has not kept pace with the improvements needed to accommodate the increased use. Even with the funding provided by passage of Proposition A (TransNet), construction and maintenance of much of the region's transportation system remains underfunded. In the unincorporated area in 1989, there was a \$46 million backlog in construction of needed roadway facilities and a \$76 million backlog in maintenance of existing roadways.

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<sup>6</sup> San Diego Association of Governments, 1989 Regional Transportation Plan, p. 161.

5. **Poorly planned or unregulated development in the vicinity of existing aviation facilities can result in future conflicts between incompatible land uses.**

**Discussion:** When new development occurs in the vicinity of existing aviation facilities without sufficient consideration of the potential impacts, incompatibility of land uses may occur. Impacts such as noise and the potential hazard from crashes must be considered during land use planning reviews to ensure the health and safety of the public and to eliminate opposition to airport operations by surrounding residents. An airport's comprehensive land use plan identifies and recommends land use types that would be compatible with the airport use. The plan is intended to prevent the development of incompatible land uses and creation of hazards. Development projects are reviewed to ensure compatibility with both the current and future plans for the airport. For airports that do not yet have an adopted comprehensive land use plan, SANDAG's Airport Land Use Commission reviews all actions, regulations, and permits within the vicinity of the airport.<sup>7</sup>

6. **Bicycle facilities in the unincorporated area have traditionally been developed at a slow rate.**

**Discussion:** Over the past 10 years, an average of 4 miles of bikeways have been built annually in the unincorporated area. This level is below the rate of bikeway development that would be needed for the County to contribute its fair share toward meeting SANDAG's goal of increasing regional bikeway mileage by 30 miles per year. This is due in large part to a lack of funding sources, a lack of education programs to encourage cycling as an alternate mode of transportation, and a lack of emphasis on the development of bicycle facilities. In recent years, an increased emphasis has been placed on the development of bicycle facilities, and in FY 89-90, approximately 15 miles of bikeways were projected to be constructed in the unincorporated area. Publicity and educational programs directed at potential cyclists as well as motorists would encourage use of the bicycle as an alternative to the car.

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<sup>7</sup> As used in this section, "vicinity" means land that will be included or reasonably could be included within an airport's comprehensive land use plan. If a designated study area for the plan has not been identified, then "vicinity" means land within two miles of the boundary of a public airport.



## **GOALS, OBJECTIVES, POLICIES AND IMPLEMENTATION MEASURES**

### **GOAL**

A SAFE, CONVENIENT, AND ECONOMICAL INTEGRATED TRANSPORTATION SYSTEM INCLUDING A WIDE RANGE OF TRANSPORTATION MODES.

### **OBJECTIVE 1:**

A Level of Service "C" or better on County Circulation Element roads.

**Policy 1.1:** New development shall provide needed roadway expansion and improvements on-site to meet the demand created by the development, and to maintain a Level of Service "C" on Circulation Element Roads during peak traffic hours. New development shall provide off-site improvements designed to contribute to the overall achievement of a Level of Service "D" on Circulation Element Roads.

**Implementation Measure 1.1.1:** Review all development proposals to determine both their short-term and long-term impacts on the roadway system. The area of impact will be determined based on the size, type and location of the project; the traffic generated by the project; and the existing circulation and development pattern in the area. [DPW, DPLU]

**Implementation Measure 1.1.2:** Require, as a condition of approval of discretionary projects, improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below "C" on on-site Circulation Element roads except within the Otay Ranch project as defined in the Otay Subregional Plan Text, Volume 2. [DPLU, DPW]

**Implementation Measure 1.1.3:** Require, as a condition of approval of discretionary projects which have a significant impact on roadways, improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below "D" on off-site and on-site abutting Circulation Element roads. New development that would significantly impact congestion on roads at LOS "E" or "F", either currently or as a result of the project, will be denied unless improvements are scheduled to increase the LOS to "D" or better or appropriate mitigation is provided. Appropriate mitigation would include a fair share contribution in the form of road improvements or a fair share contribution to an established program or project. If impacts cannot be mitigated, the project will be denied unless a specific statement of overriding findings is made pursuant to Section 15091(b) and 15093 of the State CEQA Guidelines. [DPLU, DPW]

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Implementation Measure 1.1.4: Whenever possible on development proposals, require that access to parcels adjacent to roads shown on the Circulation Element be limited to side streets in order to maintain through traffic flow. [DPW, DPLU]

**Policy 1.2:** General Plan Amendments and Rezones shall be reviewed to ensure that any proposed increases in density or intensity of use will not prevent the planned Circulation Element road system from operating at its planned Level of Service at buildout.

## **OBJECTIVE 2:**

Equitable sharing of funding for transportation facilities.

**Policy 2.1:** New development shall be required to contribute its fair share toward financing transportation facilities.

Implementation Measure 2.1.1: Apply the Bridge and Thoroughfare Fee to all areas of the County and/or establish an unincorporated area traffic impact fee to support construction of the Circulation Element roadway and bikeway system in the unincorporated area to the extent necessitated by new development. [DPW]

Implementation Measure 2.1.2: Assist and support the development of a regional transportation impact fee to finance regional transportation improvements necessitated by new development. [DPLU, DPW]

**Policy 2.2:** The County will actively work to reduce existing transportation facilities deficiencies.

Implementation Measure 2.2.1: Seek new and additional sources of funding to help finance improvements and maintenance of County transportation facilities. [DPW]

Implementation Measure 2.2.2: Seek the County's fair share of state transportation bond issues, Proposition A sales tax funds, and other state and federal funding programs. [DPW]

### **OBJECTIVE 3:**

A transportation system that is coordinated and integrated with the transportation facilities and plans of surrounding jurisdictions.

**POLICY 3.1:** The expansion of County transportation facilities will be coordinated with transportation plans of adjacent jurisdictions.

**Implementation Measure 3.1.1:** Coordinate with other jurisdictions in the review of planned transportation routes and facilities of regional or subregional importance to ensure compatibility between County, city and state plans. [DPLU, DPW]

**Implementation Measure 3.1.2:** Refer all discretionary development projects within city spheres of influence, within 1 mile of a city boundary, or within a city's designated planning review area to the appropriate city for a determination of the impact on city transportation facilities. [DPLU]

**Implementation Measure 3.1.3:** Establish a cooperative mechanism to reconcile differences between the County Circulation Element and that of neighboring cities. [DPLU]

**Implementation Measure 3.1.4:** Provide input to SANDAG during the development of regional transportation plans. [DPW, DPLU]

**Implementation Measure 3.1.5:** Coordinate with CalTrans in the review of planned improvements to State highways to ensure conformance to State requirements. [DPW, DPLU]

### **OBJECTIVE 4:**

Reduction in the demand on the road system through increased public use of alternate forms of transportation or other means.

**Policy 4.1:** The use of alternate forms of transportation such as public transit and car/van pools will be supported and encouraged to reduce both roadway congestion and pollution.

**Implementation Measure 4.1.1:** In areas where there are likely to be a large number of prospective users, coordinate the planning of all new transit routes or route changes with established development patterns and land use plans to efficiently serve existing and future transit generators. [DPW, DPLU]

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Implementation Measure 4.1.2: Work cooperatively with other jurisdictions and public transportation agencies, including the Metropolitan Transit Development Board and the North County Transit District, to provide a coordinated and integrated transit service network, including completion of the regional transit centers program. [DPW]

Implementation Measure 4.1.3: Consider the inclusion of public restrooms in the construction of new transit centers. [DPW]

Implementation Measure 4.1.4: Seek to increase transit service funds consistent with population growth and passenger demand. [DPW]

Implementation Measure 4.1.5: Site County facilities in close proximity to transit corridors, when feasible. [DGS, CAO, DPLU, DPW]

Implementation Measure 4.1.6: Establish incentive programs for employers to encourage their employees to utilize alternate forms of transportation. [DPW, DPLU, CAO]

Implementation Measure 4.1.7: Encourage employers to:

- a) provide employees with subsidized transit passes;
- b) establish carpool programs;
- c) provide vehicles for employee van-pools;
- d) provide preferential carpool parking;
- e) provide secure storage facilities, showers and lockers to encourage employees to use bicycles;
- f) use flex-time and staggered work hours;
- g) allow employees to telecommute from home or satellite offices; and
- h) participate in the commuter computer program.

[DPW, DPLU, CAO]

Implementation Measure 4.1.8: Develop fiscal and other incentives to promote the use of multi-modal means of transportation (e.g., bicycling to park-and-ride facilities). [DPW, DPLU, CAO]

Implementation Measure 4.1.9: Encourage pedestrian movement through urban design techniques, creating pedestrian-friendly environments and proper land use mix. [DPLU]

**Policy 4.2:** The County will ensure the development of its bikeway system and encourage its use.

Implementation Measure 4.2.1: Condition the approval of new development on dedication and construction of bikeways as indicated in the Circulation Element's Bicycle Network Plan. [DPLU, DPW]

Implementation Measure 4.2.2: Construct bikeways in areas where there are potentially large numbers of prospective users. [DPW]

Implementation Measure 4.2.3: Acquire cost-effective rights-of-way and/or negotiate for the use of existing rights-of-way or easements for bikeways (e.g., abandoned railroad rights-of-way, pipeline/ powerline easements, flood control channels). [DPW, DPLU]

Implementation Measure 4.2.4: Provide bicycle-carrying racks on public transportation vehicles when a need is demonstrated. [DPW]

Implementation Measure 4.2.5: Require secure bicycle storage facilities at new commercial centers, public centers, industrial centers, transit centers, airports and multi-family developments. [DPLU, DPW]

**Policy 4.3:** Consider the need for transit improvements in Large Scale Projects.

Implementation Measure 4.3.1: Refer applications for Large Scale Projects to the County Transit System for recommendations on transit facility needs. [DPLU, DPW]

Implementation Measure 4.3.2: Condition the approval of Large Scale Projects on the provision of accessible transit stops and other transit related improvements, as appropriate. [DPLU, DPW]

**Policy 4.4:** Ensure the provision of bicycle facilities and other needed bikeway related improvements in new development.

Implementation Measure 4.4.1: Refer applications for Large Scale Projects to the County Bikeway Coordinator for recommendations on requirements for the provision of bikeway facilities to serve the project. [DPLU, DPW]

**OBJECTIVE 5:**

Assurance of compatible land uses around County airports.

**Policy 5.1:** The County will ensure that land uses surrounding County airports are compatible with the operation of the airport.

**Implementation Measure 5.1.1:** Complete the development of Comprehensive Land Use Plans for each County airport. [DPW]

**Implementation Measure 5.1.2:** Review all applications for discretionary projects, building permit applications, general plan amendments and rezones located within the boundaries of an airport's Comprehensive Land Use Plan (CLUP) for compatibility with the plan as a basis for project approval. [DPW, DPLU]



## SANDAG Trip Generation Rates

(NOT SO)

# BRIEF GUIDE OF VEHICULAR TRAFFIC GENERATION RATES FOR THE SAN DIEGO REGION

APRIL 2002



401 B Street, Suite 800  
San Diego, California 92101  
(619) 699-1900 • Fax (619) 699-1950

NOTE: This listing only represents a *guide of average*, or estimated, traffic generation "driveway" rates and some very general trip data for land uses (emphasis on acreage and building square footage) in the San Diego region. These rates (both local and national) are subject to change as future documentation becomes available, or as regional sources are updated. For more specific information regarding traffic data and trip rates, please refer to the San Diego Traffic Generators manual. *Always check with local jurisdictions for their preferred or applicable rates.*

LAND USE	TRIP CATEGORIES (PRIMARY:DIVERTED:PASS-BY)*	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE (DRIVEWAY)	HIGHEST PEAK HOUR % (plus IN:OUT ratio) Between 6:00-9:30 A.M. Between 3:00-6:30 P.M.		TRIP LENGTH (Miles)†
AGRICULTURE (Open Space) .....	[80:18:2]	2/acre**			10.8
AIRPORT .....	[78:20:2]				12.5
Commercial		60/acre, 100/flight, 70/1000 sq. ft. * **	5% (6:4)	6% (5:5)	
General Aviation		6/acre, 2/flight, 6/based aircraft * **	9% (7:3)	15% (5:5)	
Heliports		100/acre**			
AUTOMOBILE®					
Car Wash					
Automatic		900/site, 600/acre**	4% (5:5)	9% (5:5)	
Self-serve		100/wash stall**	4% (5:5)	8% (5:5)	
Gasoline	[21:51:28]				2.8
with/Food Mart		160/vehicle fueling space**	7% (5:5)	9% (5:5)	
with/Food Mart & Car Wash		155/vehicle fueling space**	8% (5:5)	9% (5:5)	
Older Service Station Design		150/vehicle fueling space, 800/station**	7% (5:5)	9% (5:5)	
Sales (Dealer & Repair)		50/1000 sq. ft., 300/acre, 60/service stall * **	5% (7:3)	8% (4:6)	
Auto Repair Center		20/1000 sq. ft., 400/acre, 20/service stall *	8% (7:3)	11% (4:6)	
Auto Parts Sales		60/1000 sq. ft. * **	4%	10%	
Quick Lube		40/service stall *	7% (6:4)	10% (5:5)	
Tire Store		25/1000 sq. ft., 30/service stall**	7% (6:4)	11% (5:5)	
CEMETERY		5/acre*			
CHURCH (or Synagogue) .....	[64:25:11]	9/1000 sq. ft., 30/acre* ** (quadruple rates for Sunday, or days of assembly)	5% (6:4)	8% (5:5)	5.1
COMMERCIAL/RETAIL®					
Super Regional Shopping Center (More than 80 acres, more than 800,000 sq. ft., w/usually 3+ major stores)		35/1000 sq. ft., 400/acre*	4% (7:3)	10% (5:5)	
Regional Shopping Center .....	[54:35:11]	50/1000 sq. ft., 500/acre*	4% (7:3)	9% (5:5)	5.2
(40-80 acres, 400,000-800,000 sq. ft., w/usually 2+ major stores)					
Community Shopping Center .....	[47:31:22]	80/1000 sq. ft., 700/acre* **	4% (6:4)	10% (5:5)	3.6
(15-40 acres, 125,000-400,000 sq. ft., w/usually 1 major store, detached restaurant(s), grocery and drugstore)					
Neighborhood Shopping Center (Less than 15 acres, less than 125,000 sq. ft., w/usually grocery & drugstore, cleaners, beauty & barber shop, & fast food services)		120/1000 sq. ft., 1200/acre* **	4% (6:4)	10% (5:5)	
Commercial Shops .....	[45:40:15]				4.3
Specialty Retail/Strip Commercial		40/1000 sq. ft., 400/acre*	3% (6:4)	9% (5:5)	
Electronics Superstore		50/1000 sq. ft.**		10% (5:5)	
Factory Outlet		40/1000 sq. ft.**	3% (7:3)	9% (5:5)	
Supermarket		150/1000 sq. ft., 2000/acre* **	4% (7:3)	10% (5:5)	
Drugstore		80/1000 sq. ft.**	4% (6:4)	10% (5:5)	
Convenience Market (15-16 hours)		500/1000 sq. ft.**	8% (5:5)	9% (5:5)	
Convenience Market (24 hours)		700/1000 sq. ft.**	9% (5:5)	7% (5:5)	
Convenience Market (w/gasoline pumps)		850/1000 sq. ft., 550/vehicle fueling space**	6% (5:5)	7% (5:5)	
Discount Club		60/1000 sq. ft., 600/acre* **	1% (7:3)	9% (5:5)	
Discount Store		60/1000 sq. ft., 600/acre**	3% (6:4)	8% (5:5)	
Furniture Store		6/1000 sq. ft., 100/acre**	4% (7:3)	9% (5:5)	
Lumber Store		30/1000 sq. ft., 150/acre**	7% (5:4)	9% (5:5)	
Home Improvement Superstore		40/1000 sq. ft.**	5% (5:4)	9% (5:5)	
Hardware/Paint Store		60/1000 sq. ft., 600/acre**	2% (6:4)	9% (5:5)	
Garden Nursery		40/1000 sq. ft., 90/acre**	3% (6:4)	10% (5:5)	
Mixed Use: Commercial (w/supermarket)/Residential		110/1000 sq. ft., 2000/acre* (commercial only) 15/dwelling unit, 200/acre* (residential only)	3% (6:4) 9% (3:7)	9% (5:5) 13% (6:4)	
EDUCATION					
University (4 years) .....	[91:9:0]	2.4/student, 100 acre*	10% (8:2)	9% (3:7)	8.9
Junior College (2 years) .....	[92:7:1]	1.2/student, 24/1000 sq. ft., 120/acre* **	12% (8:2)	9% (6:4)	9.0
High School .....	[75:19:6]	1.3/student, 15/1000 sq. ft., 60/acre* **	20% (7:3)	10% (4:6)	4.8
Middle/Junior High .....	[63:25:12]	1.4/student, 12/1000 sq. ft., 50/acre**	30% (6:4)	9% (4:6)	5.0
Elementary .....	[57:25:10]	1.6/student, 14/1000 sq. ft., 90/acre* **	32% (6:4)	9% (4:6)	3.4
Day Care .....	[28:58:14]	5/child, 80/1000 sq. ft.**	17% (5:5)	18% (5:5)	3.7
FINANCIAL® .....	[35:42:23]				3.4
Bank (Walk-in only)		150/1000 sq. ft., 1000/acre* **	4% (7:3)	8% (4:6)	
with Drive-Through		200/1000 sq. ft., 1500/acre*	5% (6:4)	10% (5:5)	
Drive-Through only		250 (125 one-way)/lane*	3% (5:5)	13% (5:5)	
Savings & Loan		60/1000 sq. ft., 800/acre**	2%	9%	
Drive-Through only		100 (50 one-way)/lane**	4%	15%	
HOSPITAL .....	[73:25:2]				8.3
General		20/bed, 25/1000 sq. ft., 250/acre*	8% (7:3)	10% (4:6)	
Convalescent/Nursing		3/bed**	7% (6:4)	7% (4:6)	
INDUSTRIAL					
Industrial/Business Park (commercial included) .....	[79:19:2]	16/1000 sq. ft., 200/acre* **	12% (8:2)	12% (2:8)	9.0
Industrial Park (no commercial)		8/1000 sq. ft., 90/acre**	11% (9:1)	12% (2:8)	
Industrial Plant (multiple shifts) .....	[92:5:3]	10/1000 sq. ft., 120/acre*	14% (8:2)	15% (3:7)	11.7
Manufacturing/Assembly		4/1000 sq. ft., 50/acre**	19% (9:1)	20% (2:8)	
Warehousing		5/1000 sq. ft., 60/acre**	13% (7:3)	15% (4:6)	
Storage		2/1000 sq. ft., 0.2/vault, 30/acre*	6% (5:5)	9% (5:5)	
Science Research & Development		8/1000 sq. ft., 80/acre**	16% (9:1)	14% (1:9)	
Landfill & Recycling Center		6/acre	11% (5:5)	10% (4:6)	

(OVER)

MEMBER AGENCIES: Cities of Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, Vista and County of San Diego.

ADVISORY/LIAISON MEMBERS: California Department of Transportation, County Water Authority, U.S. Department of Defense, S.D. Unified Port District and Tijuana/Baja California.

LAND USE	TRIP CATEGORIES (PRIMARY:DIVERTED:PASS-BY)*	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE (DRIVEWAY)	HIGHEST PEAK HOUR % (plus IN:OUT ratio) Between 6:00-9:30 A.M. Between 3:00-6:30 P.M.	TRIP LENGTH (Miles)†
<b>LIBRARY</b> .....	[44:44:12]	50/1000 sq. ft., 400/acre**	2% (7:3) 10% (5:5)	3.9
<b>LODGING</b> .....	[58:38:4]			7.6
Hotel (w/convention facilities/restaurant)		10/occupied room, 300/acre	6% (6:4) 8% (6:4)	
Motel		9/occupied room, 200/acre*	8% (4:6) 9% (6:4)	
Resort Hotel		8/occupied room, 100/acre*	5% (6:4) 7% (4:6)	
Business Hotel		7/occupied room**	8% (4:6) 9% (6:4)	
<b>MILITARY</b> .....	[82:16:2]	2.5/military & civilian personnel*	8% (9:1) 10% (2:8)	11.2
<b>OFFICE</b> .....				
Standard Commercial Office (less than 100,000 sq. ft.)	[77:19:4]	20/1000 sq. ft., 300/acre*	14% (9:1)	8.8
Large (High-Rise) Commercial Office (more than 100,000 sq. ft., 6+ stories)	[82:15:3]	17/1000 sq. ft., 600/acre*	13% (9:1) 14% (2:8)	10.0
Office Park (400,000+ sq. ft.)		12/1000 sq. ft., 200/acre**	13% (9:1) 13% (2:8)	
Single Tenant Office		14/1000 sq. ft., 180/acre*	15% (9:1) 15% (2:8)	8.8
Corporate Headquarters		7/1000 sq. ft., 110/acre*	17% (9:1) 16% (1:9)	
Government (Civic Center)	[50:34:16]	30/1000 sq. ft.**	9% (9:1) 12% (3:7)	6.0
Post Office		90/1000 sq. ft.**	5% 7%	
Central/Walk-In Only		200/1000 sq. ft., 1300/acre*	6% (6:4) 9% (5:5)	
Community (w/mail drop lane)		300/1000 sq. ft., 2000/acre*	7% (5:5) 10% (5:5)	
Mail Drop Lane only		1500 (750 one-way)/lane*	7% (5:5) 12% (5:5)	
Department of Motor Vehicles		180/1000 sq. ft., 900/acre**	6% (6:4) 10% (4:6)	
Medical-Dental	[60:30:10]	50/1000 sq. ft., 500/acre*	6% (8:2) 11% (3:7)	6.4
<b>PARKS</b> .....	[66:28:6]			5.4
City (developed w/meeting rooms and sports facilities)		50/acre*	4% 13% (5:5)	
Regional (developed)		20/acre*		
Neighborhood/County (undeveloped)		5/acre (add for specific sport uses), 6/picnic site**		
State (average 1000 acres)		1/acre, 10/picnic site**		
Amusement (Theme)		80/acre, 130/acre (summer only)**	6% (6:4)	
San Diego Zoo		115/acre*		
Sea World		80/acre*		
<b>RECREATION</b> .....				
Beach, Ocean or Bay	[52:39:9]	600/1000 ft. shoreline, 60/acre*		6.3
Beach, Lake (fresh water)		50/1000 ft. shoreline, 5/acre*		
Bowling Center		30/1000 sq. ft., 300/acre, 30/lane**	7% (7:3) 11% (4:6)	
Campground		4/campsite**	4% 8%	
Golf Course		7/acre, 40/hole, 700/course**	7% (8:2) 9% (3:7)	
Driving Range only		70/acre, 14/tee box*	3% (7:3) 9% (5:5)	
Marinas		4/berth, 20/acre**	3% (3:7) 7% (6:4)	
Multi-purpose (miniature golf, video arcade, batting cage, etc.)		90/acre	2% 6%	
Racquetball/Health Club		30/1000 sq. ft., 300/acre, 40/court*	4% (6:4) 9% (6:4)	
Tennis Courts		16/acre, 30/court**	5% 11% (5:5)	
Sports Facilities				
Outdoor Stadium		50/acre, 0.2/seat*		
Indoor Arena		30/acre, 0.1/seat*		
Racetrack		40/acre, 0.6 seat*		
Theaters (multiplex w/matinee)	[66:17:17]	80/1000 sq. ft., 1.8/seat, 360/screen*	12% 8% (6:4)	6.1
<b>RESIDENTIAL</b> .....	[86:11:3]			7.9
Estate, Urban or Rural (average 1-2 DU/acre)		12/dwelling unit**	8% (3:7) 10% (7:3)	
Single Family Detached (average 3-6 DU/acre)		10/dwelling unit**	8% (3:7) 10% (7:3)	
Condominium (or any multi-family 6-20 DU/acre)		8/dwelling unit**	8% (2:8) 10% (7:3)	
Apartment (or any multi-family units more than 20 DU/acre)		6/dwelling unit**	8% (2:8) 9% (7:3)	
Military Housing (off-base, multi-family) (less than 6 DU/acre)		8/dwelling unit	7% (3:7) 9% (6:4)	
(6-20 DU/acre)		6/dwelling unit	7% (3:7) 9% (6:4)	
Mobile Home				
Family		5/dwelling unit, 40/acre*	8% (3:7) 11% (6:4)	
Adults Only		3/dwelling unit, 20/acre*	9% (3:7) 10% (6:4)	
Retirement Community		4/dwelling unit**	5% (4:6) 7% (6:4)	
Congregate Care Facility		2.5/dwelling unit**	4% (6:4) 8% (5:5)	
<b>RESTAURANT*</b> .....	[51:37:12]			4.7
Quality		100/1000 sq. ft., 3/seat, 500/acre**	7% (6:4) 8% (7:3)	
Sit-down, high turnover		160/1000 sq. ft., 6/seat, 1000/acre***	8% (5:5) 9% (6:4)	
Fast Food (w/drive-through)		650/1000 sq. ft., 20/seat, 3000/acre**	7% (5:5) 7% (5:5)	
Fast Food (without drive-through)		700/1000 sq. ft.*	5% (6:4) 7% (5:5)	
Deli/Caterers (7am-4pm)		150/1000 sq. ft., 11/seat*	9% (6:4) 3% (3:7)	
<b>TRANSPORTATION</b> .....				
Bus Depot		25/1000 sq. ft.**		
Truck Terminal		10/1000 sq. ft., 7/bay, 80/acre**	9% (4:6) 8% (5:5)	
Waterport/Marina Terminal		170/berth, 12/acre**		
Transit Station (Light Rail w/parking)		300/acre, 2 <sup>1/2</sup> /parking space (4/occupied)**	14% (7:3) 15% (3:7)	
Park & Ride Lots		400/acre (600/paved acre), 5/parking space (8/occupied)**	14% (7:3) 15% (3:7)	

\* Primary source: San Diego Traffic Generators.

\*\* Other sources: ITE Trip Generation Report (6th Edition), Trip Generation Rates (other agencies and publications), various SANDAG & CALTRANS studies, reports and estimates.

† Trip category percentage rates are daily from local household surveys, often cannot be applied to very specific land uses, and do not include non-resident drivers.

(draft SANDAG Analysis of Trip Diversion, revised November, 1990):

PRIMARY - one trip directly between origin and primary destination.

DIVERTED - linked trip (having one or more stops along the way to a primary destination) whose distance compared to direct distance  $\geq 1$  mile.

PASS-BY - undiverted or diverted  $< 1$  mile.

† Trip lengths are average weighted for all trips to and from general land use sites. (All trips system-wide average length = 6.9 miles)

‡ Fitted curve equation:  $\ln(T) = 0.502 \ln(d) + 6.945$  }  $T$  = total trips,  $x$  = 1,000 sq. ft.

§ Fitted curve equation:  $\ln(T) = 0.756 \ln(d) + 3.950$  }

¶ Fitted curve equation:  $t = -2.169 \ln(d) + 12.85$

$t$  = trips/DU,  $d$  = density (DU/acre), DU = dwelling unit

\* Suggested PASS-BY (undiverted or diverted  $< 1$  mile) percentages for trip rate reductions only during P.M. peak period (based on combination of local data/review and other sources\*\*):

<b>COMMERCIAL/RETAIL</b>	
Regional Shopping Center	20%
Community	30%
Neighborhood	40%
Specialty Retail/Strip Commercial (other)	10%
Supermarket	40%
Convenience Market	50%
Discount Club/Store	30%
<b>FINANCIAL</b>	
Bank	25%
<b>AUTOMOBILE</b>	
Gasoline Station	50%
<b>RESTAURANT</b>	
Quality	10%
Sit-down high turnover	20%
Fast Food	40%

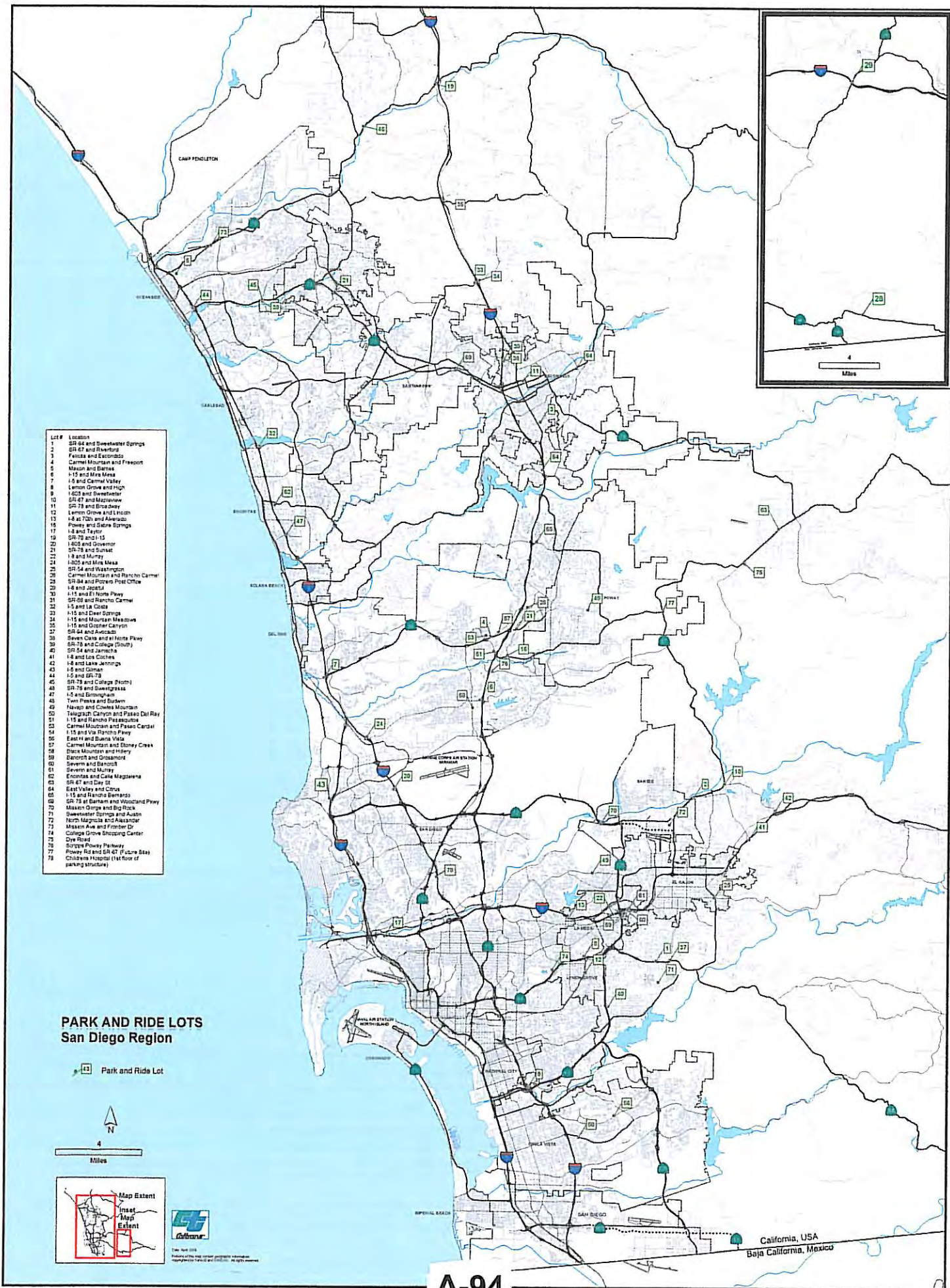
† Trip Reductions - In order to help promote regional "smart growth" policies, and acknowledge San Diego's expanding mass transit system, consider vehicle trip rate reductions (with proper documentation and necessary adjustments for peak periods). The following are some examples:

[1] A 5% daily trip reduction for land uses with transit access or near transit stations accessible within 1/4 mile.

[2] Up to 10% daily trip reduction for mixed-use developments where residential and commercial retail are combined (demonstrate mode split of walking trips to replace vehicular trips).

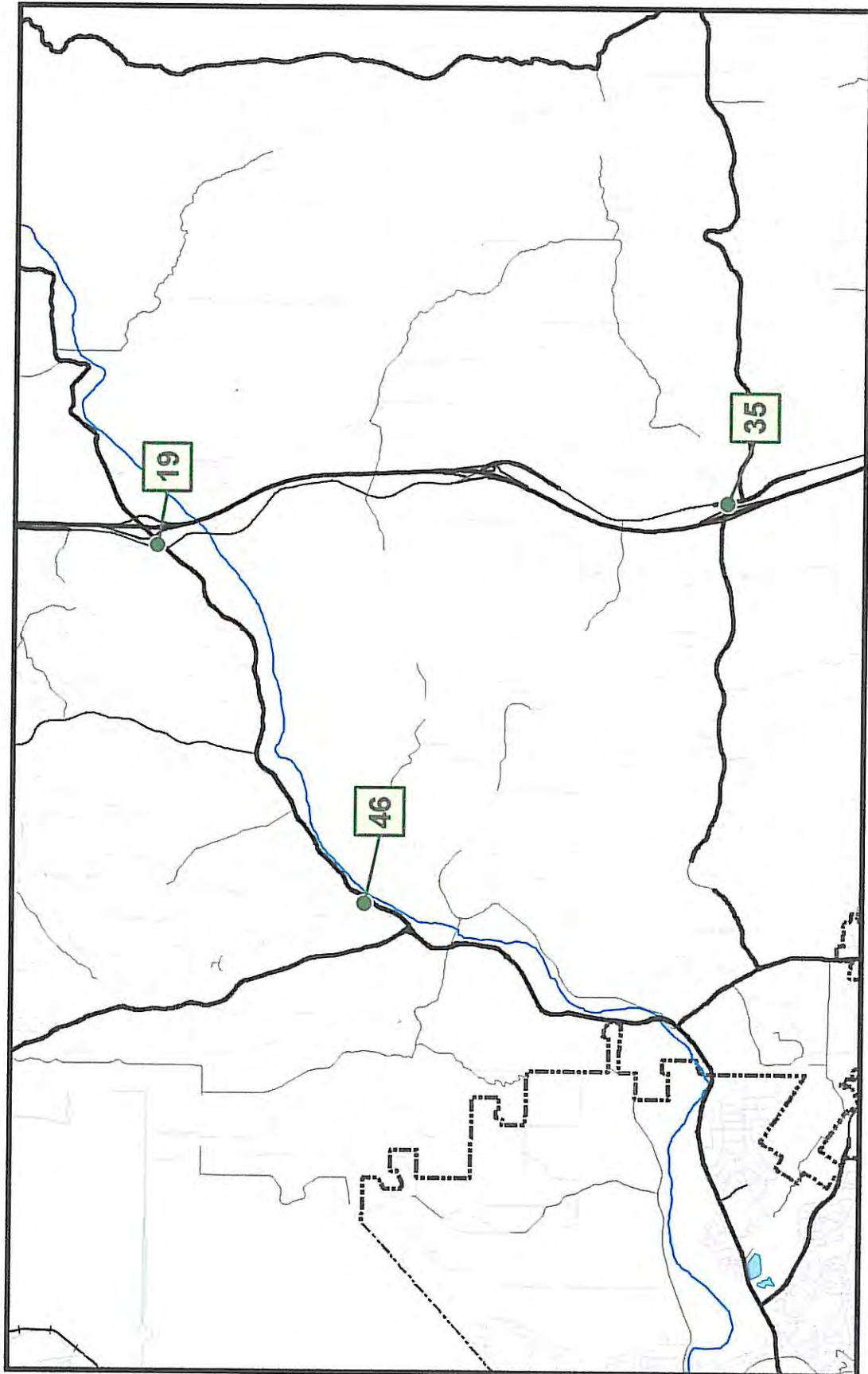
## Information on Park-and-Ride Lots





- | Lot # | Location  |
|-------|---|
| 1     | SR 64 and Sweetwater Springs                        |
| 2     | SR 67 and Riverford                                 |
| 3     | Panola and Escondido                                |
| 4     | Carmel Mountain and Freeway                         |
| 5     | Mason and Balfour                                   |
| 6     | I-15 and Mira Mesa                                  |
| 7     | I-8 and Carmel Valley                               |
| 8     | Lemon Grove and High                                |
| 9     | I-805 and Sweetwater                                |
| 10    | SR 67 and Maguire                                   |
| 11    | SR 78 and Broadway                                  |
| 12    | Lemon Grove and Lincoln                             |
| 13    | I-8 at 7th and Alexander                            |
| 14    | Poway and Stone Springs                             |
| 15    | I-8 and Taylor                                      |
| 16    | SR 78 and I-15                                      |
| 17    | I-805 and Governor                                  |
| 18    | SR 78 and Sunset                                    |
| 19    | I-8 and Murray                                      |
| 20    | I-805 and Mira Mesa                                 |
| 21    | SR 54 and Washington                                |
| 22    | Carmel Mountain and Rancho Carmel                   |
| 23    | SR 54 and Potters Post Office                       |
| 24    | I-8 and Joplin                                      |
| 25    | I-15 and El Norte Pkwy                              |
| 26    | SR 56 and Rancho Carmel                             |
| 27    | I-8 and La Costa                                    |
| 28    | I-15 and Deer Springs                               |
| 29    | I-15 and Mountain Meadows                           |
| 30    | I-15 and Copper Canyon                              |
| 31    | SR 54 and Avocado                                   |
| 32    | Seven Oaks and El Norte Pkwy                        |
| 33    | SR 78 and College County                            |
| 34    | SR 54 and Jarama                                    |
| 35    | I-8 and Los Cochinos                                |
| 36    | I-8 and Lake Jennings                               |
| 37    | I-8 and Canyon                                      |
| 38    | I-8 and SR 78                                       |
| 39    | SR 78 and College North                             |
| 40    | SR 78 and Sweetwater                                |
| 41    | I-5 and Birmingham                                  |
| 42    | Twin Peaks and Barden                               |
| 43    | Navajo and Coles Mountain                           |
| 44    | Telegraph Canyon and Paseo Del Rey                  |
| 45    | I-15 and Rancho Presidio                            |
| 46    | Carmel Mountain and Paseo Del Rey                   |
| 47    | I-15 and Via Ranch Pkwy                             |
| 48    | Emery and Santa Vista                               |
| 49    | Carmel Mountain and Doney Creek                     |
| 50    | Dixie Mountain and Inland                           |
| 51    | Boncroft and Grossmont                              |
| 52    | Sevens and Boncroft                                 |
| 53    | Sevens and Murray                                   |
| 54    | Encinitas and Calle Magdalena                       |
| 55    | SR 67 and Day St                                    |
| 56    | East Valley and Citrus                              |
| 57    | I-15 and Rancho Bernardo                            |
| 58    | SR 78 at Barden and Woodland Pkwy                   |
| 59    | Mission Gorge and Big Rock                          |
| 60    | Sweetwater Springs and Austin                       |
| 61    | North Magnolia and Alexander                        |
| 62    | Mission Ave and Frontier Dr                         |
| 63    | College Grove Shopping Center                       |
| 64    | Dye Road  |
| 65    | Scotch Pkwy Parkway                                 |
| 66    | Poway Rd and SR 67 (Future Site)                    |
| 67    | Childrens Hospital (1st floor of parking structure) |
| 68    |   |
| 69    |   |
| 70    |   |
| 71    |   |
| 72    |   |
| 73    |   |
| 74    |   |
| 75    |   |
| 76    |   |
| 77    |   |
| 78    |   |





**PARK AND RIDE LOT #46 - SWEETGRASS LANE**

LOT #	46
SPACES	50
GOODWILL, SALVATION ARMY, AMVETS LOCATION	
NEAR	CO MAINT CTR
OWNER	PRIVATE
ADDRESS	4980 SWEETGRASS LANE (RIVER VIEW CHURCH)
CITY	BONSALL
Zip1	92003

**PARK AND RIDE LOT #19 - PALA ROAD**

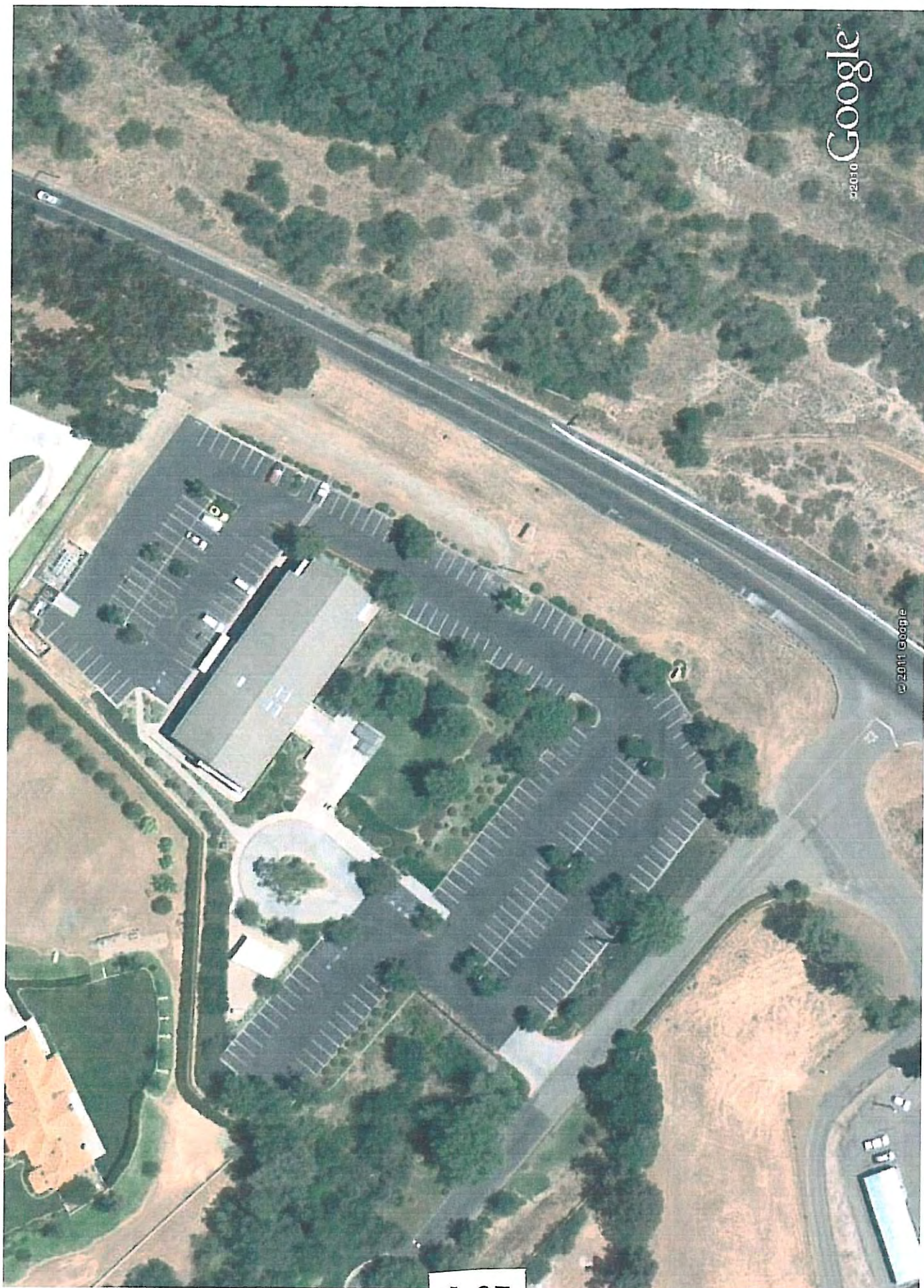
LOT #	19
SPACES	163
GOODWILL, SALVATION ARMY, AMVETS LOCATION	
NEAR	MOBIL
OWNER	STATE
ADDRESS	NW CORNER OF I-15/SR-76
CITY	PALA
Zip1	92028

**PARK AND RIDE LOT #35 - GOPHER CANYON ROAD**

LOT #	35
SPACES	11
GOODWILL, SALVATION ARMY, AMVETS LOCATION	
NEAR	FREEWAY ON-OFF RAMP
OWNER	COUNTY
ADDRESS	EAST SIDE OF I-15 GOPHER CANYON ROAD
CITY	SAN DIEGO COUNTY
Zip1	92026



2



A-97

PARK AND RIDE LOT 46



2 ←



Park AND RIDE LOT # 19

A-98



24



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Park AND RIDE LOT X35

A-99



## **APPENDIX B**

- Dai Dang Meditation Center Traffic
- Estimated Trip Generation Calculations
- Request for Design Exception to a Road Standard

Dai Dang Meditation Center Traffic

DAI DANG MEDITATION CENTER TRAFFIC											
TRAFFIC REPORT ACTUAL & ESTIMATED											
From July 20, 2008 to March 08, 2009											
Date	NOTE A:		Avg./Car	NOTE B:		NOTE C:	NOTE D:			Total Daily Guests	% of Total Guests on Site at One Time
	# Cars Recorded From 7:00 AM-12:00 PM*			Left	Staying	Left	Staying for Meditation				
	# of guests	# of Cars		20%	80%	80%	20%	30%	TOTAL		
				Before Lunch	For Lunch	After Lunch	Staying	Coming			
7/20/2008	97	46	2.1	19	78	62	16	3	19	100	97%
7/27/2008	78	38	2.1	16	62	50	13	2	15	80	98%
8/3/2008	80	41	2.0	16	64	51	13	2	15	82	98%
8/10/2008	75	34	2.2	15	60	48	12	2	14	77	97%
8/17/2008	226	87	2.6	45	181	145	36	7	43	233	97%
8/24/2008	58	32	1.8	12	46	37	9	2	11	60	97%
8/31/2008	76	39	1.9	15	61	49	12	2	14	78	97%
9/7/2008	55	29	1.9	11	44	35	9	2	11	57	96%
9/14/2008	87	41	2.1	17	70	56	14	3	17	90	97%
9/21/2008	65	32	2.0	13	52	42	10	2	12	67	97%
9/28/2008	83	38	2.2	17	66	53	14	2	16	85	98%
10/5/2008	56	26	2.2	11	45	36	9	2	11	58	97%
10/12/2008	109	42	2.6	22	87	70	18	3	21	112	97%
10/19/2008	48	26	1.8	10	38	30	8	1	9	49	98%
10/26/2008	84	38	2.2	17	67	54	13	3	16	87	97%
11/2/2008	62	28	2.2	12	50	40	10	2	12	64	97%
11/9/2008	76	36	2.1	15	61	49	12	2	14	78	97%
11/16/2008	91	43	2.1	18	73	58	14	3	17	94	97%
11/23/2008	84	41	2.0	17	67	54	13	3	16	87	97%
11/30/2008	76	35	2.2	15	61	49	12	2	14	78	97%
12/7/2008	74	36	2.1	15	59	47	12	2	14	76	97%
12/14/2008	79	37	2.1	16	63	51	13	2	15	81	98%
12/21/2008	74	34	2.2	15	59	47	12	2	14	76	97%
12/28/2008	80	38	2.1	16	64	51	13	2	15	82	98%
1/4/2009	68	32	2.1	14	54	44	11	2	13	70	97%
1/11/2009	79	36	2.2	16	63	51	13	2	15	81	98%
1/18/2009	0	0	0.0	0	0	0	0	0	0	0	0%
1/25/2009	117	56	2.1	23	94	75	18	4	22	121	97%
2/1/2009	166	65	2.6	33	133	106	27	5	32	171	97%
2/8/2009	133	67	2.0	27	106	85	21	4	25	137	97%
2/15/2009	93	45	2.1	19	74	60	15	3	18	96	97%
2/22/2009	74	34	2.2	15	59	47	12	2	14	76	97%
3/1/2009	85	42	2.0	17	68	54	14	3	17	88	97%
3/8/2009	141	67	2.1	28	113	90	23	4	27	145	97%
3/15/2009	84	39	2.2	17	67	54	13	4	17	88	95%
3/22/2009	76	35	2.2	15	61	49	12	4	16	80	95%
3/29/2009	73	36	2.0	15	58	47	12	4	15	77	95%
4/5/2009	98	47	2.1	20	78	63	16	5	20	103	95%
4/12/2009	109	48	2.3	22	87	70	17	6	23	115	95%
4/19/2009	90	40	2.3	18	72	58	14	5	19	95	95%
4/26/2009	81	39	2.1	16	65	52	13	4	17	85	95%
5/3/2009	83	41	2.0	17	66	53	13	4	17	87	95%
5/10/2009	289	114	2.5	58	231	185	46	14	60	303	95%
5/17/2009	75	38	2.0	15	60	48	12	4	16	79	95%
5/24/2009	97	46	2.1	19	78	62	16	4	20	101	96%
5/31/2009	74	33	2.2	15	59	47	12	3	15	77	96%
6/7/2009	98	45	2.2	20	78	63	15	5	20	103	95%
6/14/2009	85	41	2.1	17	68	54	14	4	18	89	96%
6/21/2009	97	49	2.0	19	78	62	16	4	20	101	96%
6/28/2009	74	36	2.1	15	59	47	12	3	15	77	96%
7/5/2009	95	46	2.1	19	76	61	15	5	20	100	95%
7/12/2009	97	47	2.1	19	78	62	16	4	20	101	96%
7/19/2009	87	43	2.0	17	70	56	14	4	18	91	96%
7/26/2009	63	37	1.7	13	50	40	10	3	13	66	95%
8/2/2009	87	44	2.0	17	70	56	14	4	18	91	96%
AVERAGE:	89.8	41.9	2.1	18.0	71.8	57.5	14.4	3.3	17.7	93.2	94.7%
NOTE A: Recorded # of vehicle coming and numbers of people coming from 7:00 Am up to 12:00 PM. Objective is to know the total people for preparing lunch											
NOTE B: Estimated 20% will leave without lunch and 80% will stay for lunch then leave.											
NOTE C: 80% of People will leave after lunch.											
NOTE D: 20% Will Stay for the Meditation and additional 30% of the people will show up for Meditation											

Dai Dang Meditation Center							
Vehicle and Vehicle Occupancy Survey							
Date: Sunday, August 17, 2009				Survey Location: 6326 Camino Del Rey Bonsall Ca 92003			
Time	Vehicles			Vehicle Occupancy Survey			
	Left In	Right In	Out	1	2	3	4 or more
8:00-8:15AM	2	3	1	2	0	1	0
8:15-8:30 AM	1	1	0	1	0	0	0
8:30-8:45 AM	4	5	0	2	3	1	3
8:45-9:00 AM	3	2	0	1	3	0	0
9:00-9:15 AM	2	6	0	1	6	1	0
9:15-9:30 AM	0	1	0	0	1	0	0
9:30-9:45 AM	0	0	0	0	0	0	0
9:45-10:00 AM	1	4	2	0	4	1	0
<b>SUM TOTAL</b>	13	22	3	7	34	12	12
<b>BREAK*****</b>							
11:00-11:15 AM	0	0	0	0	0	0	0
11:15-11:30 AM	2	3	1	4	1	0	0
11:30-11:45 AM	0	0	3	0	0	0	0
11:45-12:00 PM	0	0	0	0	0	0	0
12:00-12:15 PM	0	0	0	0	0	0	0
12:15-12:30 PM	0	0	7	0	0	0	0
12:30-12:45PM	0	0	9	0	0	0	0
12:45-1:00PM	0	0	9	0	0	0	0
<b>SUM TOTAL</b>	2	3	29	4	2	0	0
<b>BREAK*****</b>							
2:00-2:15 PM	0	0	1	0	0	0	0
2:15-2:30 PM	0	0	0	0	0	0	0
2:30-2:45 PM	0	0	0	0	0	0	0
2:45-3:00 PM	0	0	2	0	0	0	0
3:00-3:15 PM	0	1	1	1	0	0	0
3:15-3:30 PM	1	0	1	0	1	0	0
3:30-3:45 PM	1	0	3	1	0	0	0
3:45-4:00 PM	0	0	0	0	0	0	0
4:00-4:15 PM	0	2	2	0	1	0	0
4:15-4:30 PM	0	0	1	0	0	0	0
4:30-4:45 PM	0	1	0	0	0	1	0
4:45-5:00 PM	0	0	0	0	0	0	0
<b>SUM TOTAL</b>	2	4	8	2	4	3	0
<b>GRANDTOTAL</b>	17	29	40	13	40	15	12



Volumes for: Sunday, May 10, 2009

City: Bonsall

Location: Dai Daing Access n/o Camino Del Rey

Project: 9124111

DAILY TOTALS				
Entering 9124111 Existing				Total
0	0	150	153	303

AM Period	Entering	Exiting	Total	PM Period	Entering	Exiting	Total
00:00	0	0		12:00	1	8	13
00:15	0	0		12:15	1	8	25
00:30	0	0		12:30	0	6	51
00:45	0	0		12:45	0	2	60
01:00	0	0		13:00	3	4	78
01:15	0	0		13:15	4	7	76
01:30	0	0		13:30	2	9	48
01:45	0	0		13:45	0	9	38
02:00	0	0		14:00	4	10	28
02:15	0	0		14:15	1	7	20
02:30	0	0		14:30	0	5	20
02:45	0	0		14:45	0	5	21
03:00	0	0		15:00	0	1	11
03:15	0	0		15:15	1	1	9
03:30	0	0		15:30	0	1	6
03:45	1	1	1	15:45	1	2	10
04:00	0	0		16:00	1	3	13
04:15	0	0		16:15	0	2	18
04:30	0	0		16:30	0	2	20
04:45	0	0		16:45	0	1	14
05:00	0	0		17:00	1	4	
05:15	0	0		17:15	0	1	
05:30	1	0		17:30	1	0	
05:45	0	1	1	17:45	0	2	10
06:00	2	0		18:00	0	0	
06:15	0	0		18:15	0	0	
06:30	0	0		18:30	0	0	
06:45	0	2	2	18:45	0	0	
07:00	1	1		19:00	1	0	
07:15	1	4		19:15	0	0	
07:30	4	2		19:30	0	0	
07:45	2	8	7	19:45	0	1	1
08:00	4	11	6	20:00	0	1	
08:15	13	23	3	20:15	0	0	
08:30	16	35	3	20:30	1	0	
08:45	15	48	3	20:45	0	1	2
09:00	6	50	5	21:00	0	0	
09:15	10	47	4	21:15	0	1	
09:30	7	38	2	21:30	0	0	
09:45	12	35	3	21:45	0	0	1
10:00	4	33	3	22:00	0	0	
10:15	5	28	3	22:15	0	0	
10:30	7	28	3	22:30	0	0	
10:45	5	21	2	22:45	0	0	
11:00	4	21	1	23:00	0	0	
11:15	1	17	1	23:15	0	0	
11:30	2	12	4	23:30	0	0	
11:45	4	11	4	23:45	0	0	

Total Vol. 127 19 146

23 134 157

Daily Totals :				Entering	Existing	Total
0				150	153	303
AM				PM		
Split %	87.0%	13.0%	48.2%	14.6% 85.4% 51.8%		
AM Peak Hr.	08:15	11:45	08:15	PM Peak Hr.	13:15	12:15
Volume	50	45	55	Volume	10	74
P.H.F.	0.781	0.363	0.764	P.H.F.	0.625	0.597
7 - 9 Vol.	0	0	66	4 - 6 Vol.	3	21
Peak Hr.	08:00	07:00	08:00	Peak Hr.	16:45	16:15
Volume	48	7	51	Volume	2	14
P.H.F.	0.600	0.77	0.708	P.H.F.	0.000	0.583

## Estimated Trip Generation Calculations

Average Daily Trip Generation Rates					
	# of Guests	# People/Car	# Cars	Trips/Car	# Daily Trips
Actual:	303	2.5	128	2.4	303
Projected:	300	2.1	143	2.0	286
Actual Data is based on Sunday May 10, 2009 Driveway Counts & Attendance information obtained from the Dai Dang Meditation Center					
Projected Data is based on the projected maximum attendance and average vehicle occupancy that was observed to occur between July 20, 2008 and August 2, 2009					

Peak Hour Trip Generation Rates											
AM Peak Hour Trips (8:15 a.m. - 9:15 a.m.)				Mid-Day Peak Hour Trips (12:15 p.m. - 1:15				PM Peak Hour Trips (2:00 p.m. - 3:00			
Sunday May 10, 2009 Driveway Counts											
303	Total	In	Out	78	4	5	21	74	5	16	
	55	50	5								
Estimated Peak Hour Trip Generation Rates											
-	% of Daily	% In	% Out	% of Daily	% In	% Out	% of Daily	% Out	% In	% Out	% In
	18%	91%	9%								
Actual Data is based on Sunday May 10, 2009 Driveway Counts											

Request for Design Exception to a Road Standard





# County of San Diego

RICHARD E. CROMPTON  
DIRECTOR

## DEPARTMENT OF PUBLIC WORKS

5201 RUFFIN ROAD, SUITE D  
SAN DIEGO, CALIFORNIA 92123-4310

September 13, 2011

Dai Dang Meditation Center  
Attn: Ken Ho  
6326 Camino Del Rey  
Bonsall, CA 92003

Dear Mr. Ho,

REQUEST FOR DESIGN EXCEPTION TO A ROAD STANDARD AND/OR  
MODIFICATION TO PROJECT CONDITIONS – MUP 04-016 FOR APN 127-460-14;  
KIVA 04-11468.

Department of Public Works (DPW) staff reviewed your requests for exception to Public Road Standards dated August 19, 2011 and August 29, 2011. The requests are to reduce the sight distance requirements along Camino Del Rey from a proposed driveway serving the project, from five hundred fifty-five feet (555') to four hundred twelve feet (412') of stopping sight distance in the westerly direction (eastbound traffic) with the point of observation being 6.0 feet from the edge of pavement.

DPW is able to support your requests for exception to the above-mentioned condition. The prevailing speed on Camino Del Rey for eastbound traffic is 55.5 mph. The available sight distance of 412 feet in westerly direction (eastbound traffic) meets the required stopping sight distance of 412 feet for a prevailing speed of 55.5 mph with the point of observation being 6.0 feet from the edge of pavement.

The engineer also certified the available sight distance in the easterly direction (westbound traffic) is 340 feet which meets corner sight distance of 340 feet for 34 mph prevailing speed on Camino Del Rey.

It has been determined your request for exception will not adversely affect the safety and flow of traffic in this area.

The sight distance condition number 7 will be revised to read:

**1. SIGHT DISTANCE: [DPW, LDR] [UO]**

**Intent:** In order to provide an unobstructed view for safety while exiting the property and accessing a public road from the site, and to comply with the Design Standards of Section 6.1-(E) table 5 of the County of San Diego Public Road Standards, an unobstructed sight distance shall be verified. **Description of requirement:** A registered civil engineer, a registered traffic engineer, or a licensed land surveyor provides a certified signed statement that:

- a. "Physically, there is a minimum 340 feet of unobstructed sight distance based upon prevailing traffic speed in ~~both directions~~ the easterly direction along Camino Del Rey from the proposed project driveway serving the project."
- b. "Physically, there is a minimum 412 feet of unobstructed sight distance in the westerly direction with the point of observation being 6.0 feet from the edge of pavement along Camino Del Rey from the proposed project driveway serving the project."
- c. If the lines of sight fall within the existing public road right-of-way, the engineer or surveyor shall further certify that: Said lines of sight fall within the existing right-of-way and a clear space easement is not required."

**Documentation:** The applicant shall complete the certifications and submit them to the [DPW, LDR] for review. **Timing:** Prior to occupancy of the first structure built in association with this permit, and prior to final grading release, or use of the premises in reliance of this permit, and annually after that until the project is completely built, the sight distance shall be verified. **Monitoring:** The [DPW, LDR] shall verify the sight distance certifications.

Should you have any questions or need additional information related to this request, please contact Ed Sinsay, Team Leader, at (858) 694-2486 or via e-mail at [Edwin.Sinsay@sdcounty.ca.gov](mailto:Edwin.Sinsay@sdcounty.ca.gov).

Sincerely,

TROY BANKSTON, Deputy Director  
Department of Public Works

TB: EMS: SH

cc: MUP 04-016 File; Kristin Blackson, DPLU

REQUEST FOR DESIGN EXCEPTION TO A ROAD STANDARD AND/OR  
MODIFICATION TO PROJECT CONDITIONS – MUP 04-016 FOR APN 127-460-14;  
KIVA 04-11468.

September 13, 2011

Page 3

**NATURE OF REQUEST:**

The Department of Public Works received 2 requests for Exception to Public Road Standards from Dai Dang Meditation Center, Ken Ho dated August 19, 2011 and August 29, 2011. The requests are to reduce the sight distance requirements along Camino Del Rey from a proposed driveway serving the project, from five hundred fifty-five feet (555') to four hundred twelve feet (412') of stopping sight distance in the westerly direction with the point of observation being 6.0 feet from the edge of pavement.

**BACKGROUND:**

MUP 04-016 is a major use permit to legalize and expand existing operation of a Buddhist meditation center located on 8.9 acres northerly of Camino Del Rey. The project proposes three buildings (residential and halls) totaling 22,796 square feet and three existing-to-remain buildings. MUP 04-016 fronts along the north side of Camino Del Rey (SA 100), a Light Collector (2.2C) with Bike Lane.

Applicant's request is based on the following:

1. The engineer has certified the prevailing speed is 55.5 mph for eastbound traffic and 34 mph for westbound traffic at the project's proposed driveway on Camino Del Rey. The speed surveys were conducted between June 15, 2011 and June 17, 2011 along Camino Del Rey.
2. The engineer's certification of available sight distance is 412 feet in the westerly direction (eastbound traffic) which meets AASHTO stopping sight distance of 412 feet for a prevailing speed of 55.5 mph with the point of observation being 6.0 feet from the edge of pavement.
3. The engineer's certification of available sight distance is 340 feet which meets corner sight distance of 340 feet for 34 mph in the easterly direction (westbound traffic).
4. Improving the sight distance in the westerly direction along Camino Del Rey from the proposed driveway to meet Public Road Standards would require acquisition of additional offsite easement from the adjoining private property.

**PROJECT MANAGEMENT TEAM REVIEW:**

1. DPLU Planning Manager, Rosemary Rowan, concurs with the applicant's request.
2. The request was reviewed and supported by DPWs Traffic Section per email dated August 30, 2011.

REQUEST FOR DESIGN EXCEPTION TO A ROAD STANDARD AND/OR  
MODIFICATION TO PROJECT CONDITIONS – MUP 04-016 FOR APN 127-460-14;  
KIVA 04-11468.

September 13, 2011

Page 4

3. The engineer certification of available sight distance is 412 feet in the westerly direction which meets AASHTO stopping sight distance for a prevailing speed of 55.5 mph with the point of observation being 6.0 feet from the edge of pavement.
4. The provision of additional sight distance would necessitate acquisition of easement rights from an adjacent property owner.

**RECOMMENDATION:**

The Project Team supports and recommends approval of the applicant's request.

**APPLICANT ACTION:**

The applicant shall comply with the approved request.

**DPW ACTION:**

Update DPW conditions to reflect the changes.

Request Recommended/

Not Recommended:

\_\_\_\_\_ Date: \_\_\_\_\_  
Edwin M. Sinsay

Request Recommended/

Not Recommended:

\_\_\_\_\_ Date: \_\_\_\_\_  
Richard Lantis

Request Supported / Denied:






















\_\_\_\_\_ Date: \_\_\_\_\_  
Troy Bankston



## **APPENDIX C**

- Existing Conditions Analysis Worksheets

-Saturday Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.920				0.850		0.991				0.850
Flt Protected	0.950				0.981		0.950			0.950		
Satd. Flow (prot)	1770	1714	0	0	1827	1583	1770	3507	0	1770	3539	1583
Flt Permitted	0.950				0.981		0.950			0.950		
Satd. Flow (perm)	1770	1714	0	0	1827	1583	1770	3507	0	1770	3539	1583
Satd. Flow (RTOR)		58				130		7				22
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	85	58	66	26	40	125	67	585	38	82	637	21
Adj. Flow (vph)	89	60	69	27	42	130	70	609	40	85	664	22
Lane Group Flow (vph)	89	129	0	0	69	130	70	649	0	85	664	22
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	22.5	22.5	0.0	22.5	22.5	22.5	12.1	28.5	0.0	16.5	32.9	32.9
Act Effct Green (s)	10.2	10.2			9.1	9.1	7.7	42.2		12.5	49.0	49.0
Actuated g/C Ratio	0.11	0.11			0.10	0.10	0.09	0.47		0.14	0.54	0.54
v/c Ratio	0.44	0.52			0.37	0.47	0.46	0.39		0.35	0.34	0.03
Control Delay	43.4	28.9			42.8	12.8	49.5	17.3		42.2	11.1	3.7
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	43.4	28.9			42.8	12.8	49.5	17.3		42.2	11.1	3.7
LOS	D	C			D	B	D	B		D	B	A
Approach Delay		34.8			23.2			20.4			14.3	
Approach LOS		C			C			C			B	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 10 (11%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 19.9







Intersection LOS: B

Intersection Capacity Utilization 45.9%






















ICU Level of Service A

Analysis Period (min) 15

## Splits and Phases: 2: Olive Hill Rd &amp; SR-76

			
ø2	ø1	ø4	ø8
28.5 s	16.5 s	22.5 s	22.5 s
			
ø6	ø5		
32.9 s	12.1 s		

090801-Dai Dang

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr't		0.933				0.850		0.994				0.850
Flt Protected	0.950				0.982		0.950			0.950		
Satd. Flow (prot)	1770	1738	0	0	1829	1583	1770	3518	0	1770	3539	1583
Flt Permitted	0.950				0.982		0.950			0.950		
Satd. Flow (perm)	1770	1738	0	0	1829	1583	1770	3518	0	1770	3539	1583
Satd. Flow (RTOR)		39				160		5				58
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	106	83	66	39	69	154	77	929	39	151	903	66
Adj. Flow (vph)	110	86	69	41	72	160	80	968	41	157	941	69
Lane Group Flow (vph)	110	155	0	0	113	160	80	1009	0	157	941	69
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	20.5	20.5	0.0	20.5	20.5	20.5	12.0	32.0	0.0	17.0	37.0	37.0
Act Effct Green (s)	11.7	11.7			11.2	11.2	7.6	28.0		23.1	45.5	45.5
Actuated g/C Ratio	0.13	0.13			0.12	0.12	0.08	0.31		0.26	0.51	0.51
v/c Ratio	0.48	0.60			0.50	0.47	0.53	0.92		0.35	0.53	0.08
Control Delay	42.3	36.4			43.7	10.8	52.8	44.3		27.6	13.7	3.0
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	42.3	36.4			43.7	10.8	52.8	44.3		27.6	13.7	3.0
LOS	D	D			D	B	D	D		C	B	A
Approach Delay		38.8			24.4			44.9			15.0	
Approach LOS		D			C			D			B	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 60 (67%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 29.8







Intersection LOS: C

Intersection Capacity Utilization 62.8%






















ICU Level of Service B

Analysis Period (min) 15

## Splits and Phases: 2: Olive Hill Rd &amp; SR-76

			
ø1	ø2	ø4	ø8
17 s	32 s	20.5 s	20.5 s
			
ø6	ø5		
37 s	12 s		



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.926				0.850		0.994				0.850
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1770	1725	0	0	1833	1583	1770	3518	0	1770	3539	1583
Flt Permitted	0.950				0.984		0.950			0.950		
Satd. Flow (perm)	1770	1725	0	0	1833	1583	1770	3518	0	1770	3539	1583
Satd. Flow (RTOR)		48				164		4				48
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	104	55	54	30	61	157	93	877	34	116	844	54
Adj. Flow (vph)	108	57	56	31	64	164	97	914	35	121	879	56
Lane Group Flow (vph)	108	113	0	0	95	164	97	949	0	121	879	56
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	20.5	20.5	0.0	20.5	20.5	20.5	15.0	33.0	0.0	16.0	34.0	34.0
Act Effct Green (s)	11.1	11.1			10.3	10.3	10.1	40.6		12.0	44.6	44.6
Actuated g/C Ratio	0.12	0.12			0.11	0.11	0.11	0.45		0.13	0.50	0.50
v/c Ratio	0.49	0.44			0.45	0.50	0.49	0.60		0.51	0.50	0.07
Control Delay	43.8	26.9			43.4	11.6	45.9	21.7		47.1	16.7	6.0
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	43.8	26.9			43.4	11.6	45.9	21.7		47.1	16.7	6.0
LOS	D	C			D	B	D	C		D	B	A
Approach Delay		35.2			23.3			23.9			19.6	
Approach LOS		D			C			C			B	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 8 (9%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 23.0







Intersection LOS: C







Intersection Capacity Utilization 54.2%

ICU Level of Service A

Analysis Period (min) 15

## Splits and Phases: 2: Olive Hill Rd &amp; SR-76

 ø2	 ø1	 ø4	 ø8
33 s	16 s	20.5 s	20.5 s
 ø6	 ø5		
34 s	15 s		

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	144	39	0	129	48	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	167	45	0	150	56	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			213		340	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			213		340	190
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		91	100
cM capacity (veh/h)			1357		656	852
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	213	150	56			
Volume Left	0	0	56			
Volume Right	45	0	0			
cSH	1700	1700	656			
Volume to Capacity	0.13	0.09	0.09			
Queue Length 95th (ft)	0	0	7			
Control Delay (s)	0.0	0.0	11.0			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	11.0			
Approach LOS			B			
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			19.9%		ICU Level of Service	A
Analysis Period (min)			15			







	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	181	75	0	172	79	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	197	82	0	187	86	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			278		424	238
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			278		424	238
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		85	100
cM capacity (veh/h)			1284		586	801
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	278	187	86			
Volume Left	0	0	86			
Volume Right	82	0	0			
cSH	1700	1700	586			
Volume to Capacity	0.16	0.11	0.15			
Queue Length 95th (ft)	0	0	13			
Control Delay (s)	0.0	0.0	12.2			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	12.2			
Approach LOS			B			
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			25.1%	ICU Level of Service		A
Analysis Period (min)			15			







090801-Dai Dang

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	164	61	0	184	57	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	178	66	0	200	62	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			245		411	211
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			245		411	211
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		90	100
cM capacity (veh/h)			1322		597	829
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	245	200	62			
Volume Left	0	0	62			
Volume Right	66	0	0			
cSH	1700	1700	597			
Volume to Capacity	0.14	0.12	0.10			
Queue Length 95th (ft)	0	0	9			
Control Delay (s)	0.0	0.0	11.7			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	11.7			
Approach LOS			B			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			22.3%	ICU Level of Service		A
Analysis Period (min)			15			












090801-Dai Dang

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	144	0	79	129	0	37
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	167	0	92	150	0	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			167		501	167
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			167		501	167
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		100	95
cM capacity (veh/h)			1410		495	877
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	167	242	43			
Volume Left	0	92	0			
Volume Right	0	0	43			
cSH	1700	1410	877			
Volume to Capacity	0.10	0.07	0.05			
Queue Length 95th (ft)	0	5	4			
Control Delay (s)	0.0	3.3	9.3			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.3	9.3			
Approach LOS			A			
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			25.4%		ICU Level of Service	A
Analysis Period (min)			15			

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	181	0	69	172	0	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	197	0	75	187	0	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			197		534	197
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			197		534	197
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	93
cM capacity (veh/h)			1376		479	844
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	197	262	63			
Volume Left	0	75	0			
Volume Right	0	0	63			
cSH	1700	1376	844			
Volume to Capacity	0.12	0.05	0.07			
Queue Length 95th (ft)	0	4	6			
Control Delay (s)	0.0	2.6	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.6	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			29.1%		ICU Level of Service	A
Analysis Period (min)			15			










	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↕		↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	164	0	86	184	0	81
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	178	0	93	200	0	88
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			178		565	178
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			178		565	178
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		100	90
cM capacity (veh/h)			1398		454	865
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	178	293	88			
Volume Left	0	93	0			
Volume Right	0	0	88			
cSH	1700	1398	865			
Volume to Capacity	0.10	0.07	0.10			
Queue Length 95th (ft)	0	5	8			
Control Delay (s)	0.0	2.9	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.9	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization			29.7%		ICU Level of Service	A
Analysis Period (min)			15			

090801-Dai Dang










						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	79	0	48	37	0	39
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	92	0	56	43	0	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	123	77			99	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	123	77			99	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	100			100	
cM capacity (veh/h)	873	984			1494	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	92	99	45			
Volume Left	92	0	0			
Volume Right	0	43	0			
cSH	873	1700	1700			
Volume to Capacity	0.11	0.06	0.03			
Queue Length 95th (ft)	9	0	0			
Control Delay (s)	9.6	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.6	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization			15.8%		ICU Level of Service	A
Analysis Period (min)			15			














090801-Dai Dang













						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	69	0	79	58	0	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	75	0	86	63	0	82
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	199	117			149	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	199	117			149	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	100			100	
cM capacity (veh/h)	790	935			1433	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	75	149	82			
Volume Left	75	0	0			
Volume Right	0	63	0			
cSH	790	1700	1700			
Volume to Capacity	0.09	0.09	0.05			
Queue Length 95th (ft)	8	0	0			
Control Delay (s)	10.0	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	10.0	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			18.2%		ICU Level of Service	A
Analysis Period (min)			15			

090801-Dai Dang

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	86	0	57	81	0	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	93	0	62	88	0	66
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	172	106			150	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	172	106			150	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	100			100	
cM capacity (veh/h)	818	948			1431	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	93	150	66			
Volume Left	93	0	0			
Volume Right	0	88	0			
cSH	818	1700	1700			
Volume to Capacity	0.11	0.09	0.04			
Queue Length 95th (ft)	10	0	0			
Control Delay (s)	10.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	10.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization			19.4%		ICU Level of Service	A
Analysis Period (min)			15			












						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	10	86	69	45	61	10
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	13	112	90	58	79	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	317	79	92			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	317	79	92			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	89	94			
cM capacity (veh/h)	636	981	1502			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	125	90	58	79	13	
Volume Left	13	90	0	0	0	
Volume Right	112	0	0	0	13	
cSH	929	1502	1700	1700	1700	
Volume to Capacity	0.13	0.06	0.03	0.05	0.01	
Queue Length 95th (ft)	12	5	0	0	0	
Control Delay (s)	9.5	7.5	0.0	0.0	0.0	
Lane LOS	A	A				
Approach Delay (s)	9.5	4.6		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			5.1			
Intersection Capacity Utilization			23.0%	ICU Level of Service		A
Analysis Period (min)			15			

090801-Dai Dang

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	12	117	83	86	86	7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	130	92	96	96	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	376	96	103			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	376	96	103			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	86	94			
cM capacity (veh/h)	587	961	1488			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	143	92	96	96	8	
Volume Left	13	92	0	0	0	
Volume Right	130	0	0	0	8	
cSH	907	1488	1700	1700	1700	
Volume to Capacity	0.16	0.06	0.06	0.06	0.00	
Queue Length 95th (ft)	14	5	0	0	0	
Control Delay (s)	9.7	7.6	0.0	0.0	0.0	
Lane LOS	A	A				
Approach Delay (s)	9.7	3.7		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization			25.8%		ICU Level of Service	A
Analysis Period (min)			15			
























090801-Dai Dang

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	24	84	109	95	71	18
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	26	92	120	104	78	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	422	78	98			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	422	78	98			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	91	92			
cM capacity (veh/h)	541	983	1495			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	119	120	104	78	20	
Volume Left	26	120	0	0	0	
Volume Right	92	0	0	0	20	
cSH	832	1495	1700	1700	1700	
Volume to Capacity	0.14	0.08	0.06	0.05	0.01	
Queue Length 95th (ft)	12	7	0	0	0	
Control Delay (s)	10.0	7.6	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	10.0	4.1		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization			25.9%		ICU Level of Service	A
Analysis Period (min)			15			

-Sunday Conditions

090801-Dai Dang

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.897				0.850		0.995				0.850
Flt Protected	0.950				0.978		0.950			0.950		
Satd. Flow (prot)	1770	1671	0	0	1822	1583	1770	3522	0	1770	3539	1583
Flt Permitted	0.950				0.978		0.950			0.950		
Satd. Flow (perm)	1770	1671	0	0	1822	1583	1770	3522	0	1770	3539	1583
Satd. Flow (RTOR)		80				97		4				15
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	75	34	73	29	36	88	33	498	17	88	601	14
Adj. Flow (vph)	82	37	80	32	40	97	36	547	19	97	660	15
Lane Group Flow (vph)	82	117	0	0	72	97	36	566	0	97	660	15
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	22.5	22.5	0.0	22.5	22.5	22.5	12.1	28.5	0.0	16.5	32.9	32.9
Act Effct Green (s)	9.8	9.8			9.2	9.2	7.3	44.4		12.5	53.7	53.7
Actuated g/C Ratio	0.11	0.11			0.10	0.10	0.08	0.49		0.14	0.60	0.60
v/c Ratio	0.42	0.46			0.39	0.39	0.25	0.33		0.39	0.31	0.02
Control Delay	43.4	20.4			43.0	12.8	42.8	15.9		43.4	9.8	3.9
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	43.4	20.4			43.0	12.8	42.8	15.9		43.4	9.8	3.9
LOS	D	C			D	B	D	B		D	A	A
Approach Delay		29.8			25.7			17.5			13.9	
Approach LOS		C			C			B			B	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 10 (11%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 18.1







Intersection LOS: B

Intersection Capacity Utilization 40.8%






















ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Olive Hill Rd &amp; SR-76

 ø2	 ø1	 ø4	 ø8
28.5 s	16.5 s	22.5 s	22.5 s
 ø6	 ø5		
32.9 s	12.1 s		



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.913				0.850		0.988				0.850
Flt Protected	0.950				0.979		0.950			0.950		
Satd. Flow (prot)	1770	1701	0	0	1824	1583	1770	3497	0	1770	3539	1583
Flt Permitted	0.950				0.979		0.950			0.950		
Satd. Flow (perm)	1770	1701	0	0	1824	1583	1770	3497	0	1770	3539	1583
Satd. Flow (RTOR)		67				142		10				26
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	92	66	90	23	31	135	76	911	77	222	1077	35
Adj. Flow (vph)	97	69	95	24	33	142	80	959	81	234	1134	37
Lane Group Flow (vph)	97	164	0	0	57	142	80	1040	0	234	1134	37
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	20.5	20.5	0.0	20.5	20.5	20.5	12.0	32.0	0.0	17.0	37.0	37.0
Act Effct Green (s)	11.3	11.3			8.7	8.7	7.6	28.0		26.1	48.5	48.5
Actuated g/C Ratio	0.13	0.13			0.10	0.10	0.08	0.31		0.29	0.54	0.54
v/c Ratio	0.44	0.60			0.32	0.51	0.53	0.95		0.46	0.59	0.04
Control Delay	41.5	30.9			42.1	13.4	52.8	48.6		28.1	13.5	3.0
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	41.5	30.9			42.1	13.4	52.8	48.6		28.1	13.5	3.0
LOS	D	C			D	B	D	D		C	B	A
Approach Delay		34.9			21.6			48.9			15.7	
Approach LOS		C			C			D			B	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 60 (67%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 30.2







Intersection LOS: C

Intersection Capacity Utilization 65.6%

ICU Level of Service C






















Analysis Period (min) 15

## Splits and Phases: 2: Olive Hill Rd &amp; SR-76

			
ø1	ø2	ø4	ø8
17 s	32 s	20.5 s	20.5 s
			
ø6	ø5		
37 s	12 s		



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Fr <sub>t</sub>		0.914				0.850		0.996				0.850
Flt Protected	0.950				0.985		0.950			0.950		
Satd. Flow (prot)	1770	1703	0	0	1835	1583	1770	3525	0	1770	3539	1583
Flt Permitted	0.950				0.985		0.950			0.950		
Satd. Flow (perm)	1770	1703	0	0	1835	1583	1770	3525	0	1770	3539	1583
Satd. Flow (RTOR)		54				115		3				8
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	96	37	50	24	54	107	55	1044	29	122	917	9
Adj. Flow (vph)	103	40	54	26	58	115	59	1123	31	131	986	10
Lane Group Flow (vph)	103	94	0	0	84	115	59	1154	0	131	986	10
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	20.5	20.5	0.0	20.5	20.5	20.5	15.0	33.0	0.0	16.0	34.0	34.0
Act Effct Green (s)	10.9	10.9			9.8	9.8	10.0	41.3		12.0	45.3	45.3
Actuated g/C Ratio	0.12	0.12			0.11	0.11	0.11	0.46		0.13	0.50	0.50
v/c Ratio	0.48	0.37			0.42	0.42	0.30	0.71		0.56	0.55	0.01
Control Delay	43.8	21.7			43.2	12.1	40.4	24.0		48.7	17.0	8.1
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	43.8	21.7			43.2	12.1	40.4	24.0		48.7	17.0	8.1
LOS	D	C			D	B	D	C		D	B	A
Approach Delay		33.2			25.2			24.8			20.6	
Approach LOS		C			C			C			C	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 8 (9%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 23.7







Intersection LOS: C







Intersection Capacity Utilization 58.5%

ICU Level of Service B

Analysis Period (min) 15










Splits and Phases: 2: Olive Hill Rd &amp; SR-76

 ø2	 ø1	 ø4	 ø8
33 s	16 s	20.5 s	20.5 s
 ø6	 ø5		
34 s	15 s		

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↑	↩	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	115	29	0	131	8	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	129	33	0	147	9	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			162		293	146
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			162		293	146
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1417		698	902
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	162	147	9			
Volume Left	0	0	9			
Volume Right	33	0	0			
cSH	1700	1700	698			
Volume to Capacity	0.10	0.09	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	0.0	10.2			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	10.2			
Approach LOS			B			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			17.8%		ICU Level of Service	A
Analysis Period (min)			15			

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	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	213	158	0	163	43	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	222	165	0	170	45	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			386		474	304
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			386		474	304
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		92	100
cM capacity (veh/h)			1172		549	736
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	386	170	45			
Volume Left	0	0	45			
Volume Right	165	0	0			
cSH	1700	1700	549			
Volume to Capacity	0.23	0.10	0.08			
Queue Length 95th (ft)	0	0	7			
Control Delay (s)	0.0	0.0	12.1			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	12.1			
Approach LOS			B			
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			30.9%	ICU Level of Service		A
Analysis Period (min)			15			

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	143	63	0	157	64	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	174	77	0	191	78	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			251		404	213
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			251		404	213
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		87	100
cM capacity (veh/h)			1314		602	827
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	251	191	78			
Volume Left	0	0	78			
Volume Right	77	0	0			
cSH	1700	1700	602			
Volume to Capacity	0.15	0.11	0.13			
Queue Length 95th (ft)	0	0	11			
Control Delay (s)	0.0	0.0	11.9			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	11.9			
Approach LOS			B			
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			21.6%	ICU Level of Service		A
Analysis Period (min)			15			












	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↕		↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	115	0	44	131	0	41
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	129	0	49	147	0	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			129		375	129
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			129		375	129
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	95
cM capacity (veh/h)			1456		605	921
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	129	197	46			
Volume Left	0	49	0			
Volume Right	0	0	46			
cSH	1700	1456	921			
Volume to Capacity	0.08	0.03	0.05			
Queue Length 95th (ft)	0	3	4			
Control Delay (s)	0.0	2.1	9.1			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.1	9.1			
Approach LOS			A			
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			19.3%	ICU Level of Service		A
Analysis Period (min)			15			










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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	213	0	78	163	0	63
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	222	0	81	170	0	66
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			222		554	222
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			222		554	222
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		100	92
cM capacity (veh/h)			1347		464	818
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	222	251	66			
Volume Left	0	81	0			
Volume Right	0	0	66			
cSH	1700	1347	818			
Volume to Capacity	0.13	0.06	0.08			
Queue Length 95th (ft)	0	5	7			
Control Delay (s)	0.0	2.9	9.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.9	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			30.8%		ICU Level of Service	A
Analysis Period (min)			15			










	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↕		↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	143	0	62	157	0	54
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	174	0	76	191	0	66
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			174		517	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			174		517	174
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	92
cM capacity (veh/h)			1402		490	869
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	174	267	66			
Volume Left	0	76	0			
Volume Right	0	0	66			
cSH	1700	1402	869			
Volume to Capacity	0.10	0.05	0.08			
Queue Length 95th (ft)	0	4	6			
Control Delay (s)	0.0	2.5	9.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.5	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			25.9%	ICU Level of Service		A
Analysis Period (min)			15			

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	44	0	8	41	0	29
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	49	0	9	46	0	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	65	32			55	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	65	32			55	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			100	
cM capacity (veh/h)	941	1042			1550	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	49	55	33			
Volume Left	49	0	0			
Volume Right	0	46	0			
cSH	941	1700	1700			
Volume to Capacity	0.05	0.03	0.02			
Queue Length 95th (ft)	4	0	0			
Control Delay (s)	9.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		3.3				
Intersection Capacity Utilization		13.3%		ICU Level of Service	A	
Analysis Period (min)		15				














						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	78	0	43	63	0	158
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	81	0	45	66	0	165
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	242	78			110	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	242	78			110	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	100			100	
cM capacity (veh/h)	746	983			1480	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	81	110	165			
Volume Left	81	0	0			
Volume Right	0	66	0			
cSH	746	1700	1700			
Volume to Capacity	0.11	0.06	0.10			
Queue Length 95th (ft)	9	0	0			
Control Delay (s)	10.4	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	10.4	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		2.4				
Intersection Capacity Utilization		19.3%		ICU Level of Service		A
Analysis Period (min)		15				












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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	62	0	64	54	0	63
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	76	0	78	66	0	77
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	188	111			144	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	188	111			144	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	100			100	
cM capacity (veh/h)	801	942			1439	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	76	144	77			
Volume Left	76	0	0			
Volume Right	0	66	0			
cSH	801	1700	1700			
Volume to Capacity	0.09	0.08	0.05			
Queue Length 95th (ft)	8	0	0			
Control Delay (s)	10.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	10.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		2.5				
Intersection Capacity Utilization		16.8%		ICU Level of Service		A
Analysis Period (min)		15				

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




						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	7	70	57	33	29	8
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	9	85	70	40	35	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	215	35	45			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	215	35	45			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	92	96			
cM capacity (veh/h)	739	1037	1563			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	94	70	40	35	10	
Volume Left	9	70	0	0	0	
Volume Right	85	0	0	0	10	
cSH	1001	1563	1700	1700	1700	
Volume to Capacity	0.09	0.04	0.02	0.02	0.01	
Queue Length 95th (ft)	8	3	0	0	0	
Control Delay (s)	9.0	7.4	0.0	0.0	0.0	
Lane LOS	A	A				
Approach Delay (s)	9.0	4.7		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			5.5			
Intersection Capacity Utilization			21.2%	ICU Level of Service		A
Analysis Period (min)			15			

090801-Dai Dang

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	11	110	73	72	81	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	12	117	78	77	86	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	318	86	99			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	318	86	99			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	88	95			
cM capacity (veh/h)	640	973	1494			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	129	78	77	86	13	
Volume Left	12	78	0	0	0	
Volume Right	117	0	0	0	13	
cSH	929	1494	1700	1700	1700	
Volume to Capacity	0.14	0.05	0.05	0.05	0.01	
Queue Length 95th (ft)	12	4	0	0	0	
Control Delay (s)	9.5	7.5	0.0	0.0	0.0	
Lane LOS	A	A				
Approach Delay (s)	9.5	3.8		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization			24.8%	ICU Level of Service		A
Analysis Period (min)			15			
























090801-Dai Dang

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	14	75	104	68	51	9
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	15	81	112	73	55	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	352	55	65			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	352	55	65			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	92	93			
cM capacity (veh/h)	599	1012	1538			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	96	112	73	55	10	
Volume Left	15	112	0	0	0	
Volume Right	81	0	0	0	10	
cSH	913	1538	1700	1700	1700	
Volume to Capacity	0.10	0.07	0.04	0.03	0.01	
Queue Length 95th (ft)	9	6	0	0	0	
Control Delay (s)	9.4	7.5	0.0	0.0	0.0	
Lane LOS	A	A				
Approach Delay (s)	9.4	4.5		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			5.0			
Intersection Capacity Utilization			24.5%	ICU Level of Service		A
Analysis Period (min)			15			

## **APPENDIX D**

- Existing + Typical Sunday Conditions Analysis Worksheets

-Saturday Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.922				0.850		0.989				0.850
Flt Protected	0.950				0.980		0.950			0.950		
Satd. Flow (prot)	1770	1717	0	0	1825	1583	1770	3500	0	1770	3539	1583
Flt Permitted	0.950				0.980		0.950			0.950		
Satd. Flow (perm)	1770	1717	0	0	1825	1583	1770	3500	0	1770	3539	1583
Satd. Flow (RTOR)		54				131		9				22
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	85	61	66	27	40	126	67	585	45	89	637	21
Adj. Flow (vph)	89	64	69	28	42	131	70	609	47	93	664	22
Lane Group Flow (vph)	89	133	0	0	70	131	70	656	0	93	664	22
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	22.5	22.5	0.0	22.5	22.5	22.5	12.1	28.5	0.0	16.5	32.9	32.9
Act Effct Green (s)	10.3	10.3			9.1	9.1	7.7	42.0		12.5	48.9	48.9
Actuated g/C Ratio	0.11	0.11			0.10	0.10	0.09	0.47		0.14	0.54	0.54
v/c Ratio	0.44	0.54			0.38	0.47	0.46	0.40		0.38	0.35	0.03
Control Delay	43.0	30.7			42.9	12.8	49.5	17.4		43.0	11.2	3.8
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	43.0	30.7			42.9	12.8	49.5	17.4		43.0	11.2	3.8
LOS	D	C			D	B	D	B		D	B	A
Approach Delay		35.6			23.3			20.5			14.8	
Approach LOS		D			C			C			B	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 10 (11%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 20.2







Intersection LOS: C

Intersection Capacity Utilization 46.7%






















ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Olive Hill Rd &amp; SR-76

 ø2	 ø1	 ø4	 ø8
28.5 s	16.5 s	22.5 s	22.5 s
 ø6	 ø5		
32.9 s	12.1 s		



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.933				0.850		0.994				0.850
Flt Protected	0.950				0.980		0.950			0.950		
Satd. Flow (prot)	1770	1738	0	0	1825	1583	1770	3518	0	1770	3539	1583
Flt Permitted	0.950				0.980		0.950			0.950		
Satd. Flow (perm)	1770	1738	0	0	1825	1583	1770	3518	0	1770	3539	1583
Satd. Flow (RTOR)		39				172		5				58
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	106	83	66	50	73	165	77	929	40	152	903	66
Adj. Flow (vph)	110	86	69	52	76	172	80	968	42	158	941	69
Lane Group Flow (vph)	110	155	0	0	128	172	80	1010	0	158	941	69
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	20.5	20.5	0.0	20.5	20.5	20.5	12.0	32.0	0.0	17.0	37.0	37.0
Act Effect Green (s)	11.7	11.7			11.9	11.9	7.6	28.0		22.4	44.8	44.8
Actuated g/C Ratio	0.13	0.13			0.13	0.13	0.08	0.31		0.25	0.50	0.50
v/c Ratio	0.48	0.60			0.53	0.48	0.53	0.92		0.36	0.53	0.08
Control Delay	42.3	36.4			43.7	10.2	52.8	44.4		28.6	14.3	3.2
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	42.3	36.4			43.7	10.2	52.8	44.4		28.6	14.3	3.2
LOS	D	D			D	B	D	D		C	B	A
Approach Delay		38.8			24.5			45.0			15.6	
Approach LOS		D			C			D			B	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 60 (67%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 30.1

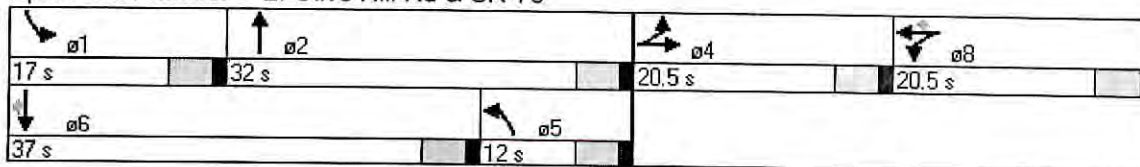
Intersection LOS: C






















Intersection Capacity Utilization 63.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Olive Hill Rd &amp; SR-76



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.926				0.850		0.994				0.850
Flt Protected	0.950				0.983		0.950			0.950		
Satd. Flow (prot)	1770	1725	0	0	1831	1583	1770	3518	0	1770	3539	1583
Flt Permitted	0.950				0.983		0.950			0.950		
Satd. Flow (perm)	1770	1725	0	0	1831	1583	1770	3518	0	1770	3539	1583
Satd. Flow (RTOR)		48				166		5				48
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	104	55	54	32	62	159	93	877	35	117	844	54
Adj. Flow (vph)	108	57	56	33	65	166	97	914	36	122	879	56
Lane Group Flow (vph)	108	113	0	0	98	166	97	950	0	122	879	56
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	20.5	20.5	0.0	20.5	20.5	20.5	15.0	33.0	0.0	16.0	34.0	34.0
Act Effect Green (s)	11.1	11.1			10.5	10.5	10.1	40.4		12.0	44.4	44.4
Actuated g/C Ratio	0.12	0.12			0.12	0.12	0.11	0.45		0.13	0.49	0.49
v/c Ratio	0.49	0.44			0.46	0.50	0.49	0.60		0.52	0.50	0.07
Control Delay	43.8	26.9			43.4	11.5	45.9	21.8		47.3	16.8	6.1
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	43.8	26.9			43.4	11.5	45.9	21.8		47.3	16.8	6.1
LOS	D	C			D	B	D	C		D	B	A
Approach Delay		35.2			23.3			24.0			19.7	
Approach LOS		D			C			C			B	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 8 (9%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 23.2







Intersection LOS: C










Intersection Capacity Utilization 54.3%

ICU Level of Service A

Analysis Period (min) 15

## Splits and Phases: 2: Olive Hill Rd &amp; SR-76

 ø2	 ø1	 ø4	 ø8
33 s	16 s	20.5 s	20.5 s
 ø6	 ø5		
34 s	15 s		

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	161	39	0	131	48	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	187	45	0	152	56	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			233		362	210
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			233		362	210
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		91	100
cM capacity (veh/h)			1335		637	830
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	233	152	56			
Volume Left	0	0	56			
Volume Right	45	0	0			
cSH	1700	1700	637			
Volume to Capacity	0.14	0.09	0.09			
Queue Length 95th (ft)	0	0	7			
Control Delay (s)	0.0	0.0	11.2			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	11.2			
Approach LOS			B			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			20.8%		ICU Level of Service	A
Analysis Period (min)			15			









090801-Dai Dang

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	183	75	0	198	79	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	199	82	0	215	86	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			280		455	240
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			280		455	240
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		85	100
cM capacity (veh/h)			1282		563	799
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	280	215	86			
Volume Left	0	0	86			
Volume Right	82	0	0			
cSH	1700	1700	563			
Volume to Capacity	0.16	0.13	0.15			
Queue Length 95th (ft)	0	0	13			
Control Delay (s)	0.0	0.0	12.5			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	12.5			
Approach LOS			B			
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			25.2%	ICU Level of Service		A
Analysis Period (min)			15			












	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↘	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	166	61	0	189	57	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	180	66	0	205	62	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			247		419	214
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			247		419	214
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		90	100
cM capacity (veh/h)			1319		591	826
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	247	205	62			
Volume Left	0	0	62			
Volume Right	66	0	0			
cSH	1700	1700	591			
Volume to Capacity	0.15	0.12	0.10			
Queue Length 95th (ft)	0	0	9			
Control Delay (s)	0.0	0.0	11.8			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	11.8			
Approach LOS			B			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			22.4%	ICU Level of Service		A
Analysis Period (min)			15			










						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↔		↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	161	0	79	131	0	40
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	187	0	92	152	0	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			187		523	187
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			187		523	187
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		100	95
cM capacity (veh/h)			1387		480	855
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	187	244	47			
Volume Left	0	92	0			
Volume Right	0	0	47			
cSH	1700	1387	855			
Volume to Capacity	0.11	0.07	0.05			
Queue Length 95th (ft)	0	5	4			
Control Delay (s)	0.0	3.3	9.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.3	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			26.4%		ICU Level of Service	A
Analysis Period (min)			15			










	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↕		↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	183	0	73	198	0	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	199	0	79	215	0	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			199		573	199
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			199		573	199
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		100	93
cM capacity (veh/h)			1373		453	842
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	199	295	63			
Volume Left	0	79	0			
Volume Right	0	0	63			
cSH	1700	1373	842			
Volume to Capacity	0.12	0.06	0.07			
Queue Length 95th (ft)	0	5	6			
Control Delay (s)	0.0	2.5	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.5	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			30.8%	ICU Level of Service		A
Analysis Period (min)			15			












	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↑
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	166	0	87	189	0	81
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	180	0	95	205	0	88
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			180		575	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			180		575	180
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		100	90
cM capacity (veh/h)			1395		447	862
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	180	300	88			
Volume Left	0	95	0			
Volume Right	0	0	88			
cSH	1700	1395	862			
Volume to Capacity	0.11	0.07	0.10			
Queue Length 95th (ft)	0	5	8			
Control Delay (s)	0.0	2.9	9.6			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.9	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization			30.2%	ICU Level of Service		A
Analysis Period (min)			15			














						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	79	0	48	40	0	39
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	92	0	56	47	0	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	124	79			102	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	124	79			102	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	100			100	
cM capacity (veh/h)	871	981			1490	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	92	102	45			
Volume Left	92	0	0			
Volume Right	0	47	0			
cSH	871	1700	1700			
Volume to Capacity	0.11	0.06	0.03			
Queue Length 95th (ft)	9	0	0			
Control Delay (s)	9.6	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.6	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization			16.0%		ICU Level of Service	A
Analysis Period (min)			15			












						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	73	0	79	58	0	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	0	86	63	0	82
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	199	117			149	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	199	117			149	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	100			100	
cM capacity (veh/h)	790	935			1433	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	79	149	82			
Volume Left	79	0	0			
Volume Right	0	63	0			
cSH	790	1700	1700			
Volume to Capacity	0.10	0.09	0.05			
Queue Length 95th (ft)	8	0	0			
Control Delay (s)	10.1	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	10.1	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization		18.4%		ICU Level of Service		A
Analysis Period (min)		15				

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	87	0	57	81	0	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	95	0	62	88	0	66
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	172	106			150	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	172	106			150	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	100			100	
cM capacity (veh/h)	818	948			1431	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	95	150	66			
Volume Left	95	0	0			
Volume Right	0	88	0			
cSH	818	1700	1700			
Volume to Capacity	0.12	0.09	0.04			
Queue Length 95th (ft)	10	0	0			
Control Delay (s)	10.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	10.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization		19.5%		ICU Level of Service		A
Analysis Period (min)		15				
























						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	11	88	88	45	61	19
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	14	114	114	58	79	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	366	79	104			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	366	79	104			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	88	92			
cM capacity (veh/h)	585	981	1488			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	129	114	58	79	25	
Volume Left	14	114	0	0	0	
Volume Right	114	0	0	0	25	
cSH	912	1488	1700	1700	1700	
Volume to Capacity	0.14	0.08	0.03	0.05	0.01	
Queue Length 95th (ft)	12	6	0	0	0	
Control Delay (s)	9.6	7.6	0.0	0.0	0.0	
Lane LOS	A	A				
Approach Delay (s)	9.6	5.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			5.2			
Intersection Capacity Utilization			24.3%		ICU Level of Service	A
Analysis Period (min)			15			



						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	25	147	84	86	86	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	163	93	96	96	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	378	96	104			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	378	96	104			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	83	94			
cM capacity (veh/h)	585	961	1487			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	191	93	96	96	9	
Volume Left	28	93	0	0	0	
Volume Right	163	0	0	0	9	
cSH	879	1487	1700	1700	1700	
Volume to Capacity	0.22	0.06	0.06	0.06	0.01	
Queue Length 95th (ft)	21	5	0	0	0	
Control Delay (s)	10.2	7.6	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	10.2	3.7		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			5.5			
Intersection Capacity Utilization			28.4%		ICU Level of Service	A
Analysis Period (min)			15			

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	27	91	111	95	71	19
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	30	100	122	104	78	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	426	78	99			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	426	78	99			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	90	92			
cM capacity (veh/h)	537	983	1494			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	130	122	104	78	21	
Volume Left	30	122	0	0	0	
Volume Right	100	0	0	0	21	
cSH	826	1494	1700	1700	1700	
Volume to Capacity	0.16	0.08	0.06	0.05	0.01	
Queue Length 95th (ft)	14	7	0	0	0	
Control Delay (s)	10.2	7.6	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	10.2	4.1		0.0		
Approach LOS	B					
<b>Intersection Summary</b>						
Average Delay			4.9			
Intersection Capacity Utilization			26.6%		ICU Level of Service	A
Analysis Period (min)			15			

-Sunday Conditions

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.901				0.850		0.993				0.850
Flt Protected	0.950				0.978		0.950			0.950		
Satd. Flow (prot)	1770	1678	0	0	1822	1583	1770	3514	0	1770	3539	1583
Flt Permitted	0.950				0.978		0.950			0.950		
Satd. Flow (perm)	1770	1678	0	0	1822	1583	1770	3514	0	1770	3539	1583
Satd. Flow (RTOR)		80				98		5				15
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	75	37	73	30	36	89	33	498	24	95	601	14
Adj. Flow (vph)	82	41	80	33	40	98	36	547	26	104	660	15
Lane Group Flow (vph)	82	121	0	0	73	98	36	573	0	104	660	15
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	22.5	22.5	0.0	22.5	22.5	22.5	12.1	28.5	0.0	16.5	32.9	32.9
Act Effct Green (s)	9.8	9.8			9.3	9.3	7.3	44.4		12.5	53.6	53.6
Actuated g/C Ratio	0.11	0.11			0.10	0.10	0.08	0.49		0.14	0.60	0.60
v/c Ratio	0.42	0.47			0.39	0.39	0.25	0.33		0.42	0.31	0.02
Control Delay	43.4	21.2			42.9	12.7	42.8	15.9		44.1	9.9	4.1
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	43.4	21.2			42.9	12.7	42.8	15.9		44.1	9.9	4.1
LOS	D	C			D	B	D	B		D	A	A
Approach Delay		30.2			25.6			17.5			14.3	
Approach LOS		C			C			B			B	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 10 (11%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 18.4







Intersection LOS: B

Intersection Capacity Utilization 40.8%






















ICU Level of Service A

Analysis Period (min) 15

## Splits and Phases: 2: Olive Hill Rd &amp; SR-76

 ø2	 ø1	 ø4	 ø8
28.5 s	16.5 s	22.5 s	22.5 s
 ø6	 ø5		
32.9 s	12.1 s		



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.913				0.850		0.988				0.850
Flt Protected	0.950				0.976		0.950			0.950		
Satd. Flow (prot)	1770	1701	0	0	1818	1583	1770	3497	0	1770	3539	1583
Flt Permitted	0.950				0.976		0.950			0.950		
Satd. Flow (perm)	1770	1701	0	0	1818	1583	1770	3497	0	1770	3539	1583
Satd. Flow (RTOR)		67				154		10				26
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	92	66	90	34	35	146	76	911	78	223	1077	35
Adj. Flow (vph)	97	69	95	36	37	154	80	959	82	235	1134	37
Lane Group Flow (vph)	97	164	0	0	73	154	80	1041	0	235	1134	37
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	20.5	20.5	0.0	20.5	20.5	20.5	12.0	32.0	0.0	17.0	37.0	37.0
Act Effct Green (s)	11.3	11.3			9.3	9.3	7.6	28.0		25.4	47.8	47.8
Actuated g/C Ratio	0.13	0.13			0.10	0.10	0.08	0.31		0.28	0.53	0.53
v/c Ratio	0.44	0.60			0.39	0.51	0.53	0.95		0.47	0.60	0.04
Control Delay	41.5	30.9			42.9	12.7	52.8	48.8		29.2	14.0	3.2
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	41.5	30.9			42.9	12.7	52.8	48.8		29.2	14.0	3.2
LOS	D	C			D	B	D	D		C	B	A
Approach Delay		34.9			22.4			49.1			16.2	
Approach LOS		C			C			D			B	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 60 (67%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 30.5







Intersection LOS: C






















Intersection Capacity Utilization 66.1%

ICU Level of Service C

Analysis Period (min) 15

## Splits and Phases: 2: Olive Hill Rd &amp; SR-76

			
ø1	ø2	ø4	ø8
17 s	32 s	20.5 s	20.5 s
			
ø6	ø5		
37 s	12 s		

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.914				0.850		0.996				0.850
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1770	1703	0	0	1833	1583	1770	3525	0	1770	3539	1583
Flt Permitted	0.950				0.984		0.950			0.950		
Satd. Flow (perm)	1770	1703	0	0	1833	1583	1770	3525	0	1770	3539	1583
Satd. Flow (RTOR)		54				117		3				8
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	96	37	50	26	55	109	55	1044	30	123	917	9
Adj. Flow (vph)	103	40	54	28	59	117	59	1123	32	132	986	10
Lane Group Flow (vph)	103	94	0	0	87	117	59	1155	0	132	986	10
Turn Type	Split			Split		Perm	Prot			Prot		Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						6
Total Split (s)	20.5	20.5	0.0	20.5	20.5	20.5	15.0	33.0	0.0	16.0	34.0	34.0
Act Effct Green (s)	10.9	10.9			9.9	9.9	10.0	41.2		12.0	45.2	45.2
Actuated g/C Ratio	0.12	0.12			0.11	0.11	0.11	0.46		0.13	0.50	0.50
v/c Ratio	0.48	0.37			0.43	0.42	0.30	0.72		0.56	0.55	0.01
Control Delay	43.8	21.7			43.3	12.0	40.4	24.2		48.9	17.1	8.2
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	43.8	21.7			43.3	12.0	40.4	24.2		48.9	17.1	8.2
LOS	D	C			D	B	D	C		D	B	A
Approach Delay		33.2			25.3			25.0			20.7	
Approach LOS		C			C			C			C	

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 8 (9%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 23.9







Intersection LOS: C

Intersection Capacity Utilization 58.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Olive Hill Rd &amp; SR-76

 ø2	 ø1	 ø4	 ø8
33 s	16 s	20.5 s	20.5 s
 ø6	 ø5		
34 s	15 s		

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	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↘			↗	↖	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	132	29	0	133	8	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	148	33	0	149	9	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			181		314	165
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			181		314	165
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1394		679	880
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	181	149	9			
Volume Left	0	0	9			
Volume Right	33	0	0			
cSH	1700	1700	679			
Volume to Capacity	0.11	0.09	0.01			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	0.0	10.4			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			18.7%	ICU Level of Service		A
Analysis Period (min)			15			



	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↙	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	215	158	0	189	43	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	224	165	0	197	45	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			389		503	306
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			389		503	306
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		92	100
cM capacity (veh/h)			1170		528	734
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	389	197	45			
Volume Left	0	0	45			
Volume Right	165	0	0			
cSH	1700	1700	528			
Volume to Capacity	0.23	0.12	0.08			
Queue Length 95th (ft)	0	0	7			
Control Delay (s)	0.0	0.0	12.4			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	12.4			
Approach LOS			B			
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			31.0%	ICU Level of Service		A
Analysis Period (min)			15			



	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	145	63	0	162	64	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	177	77	0	198	78	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			254		413	215
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			254		413	215
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		87	100
cM capacity (veh/h)			1311		596	825
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	254	198	78			
Volume Left	0	0	78			
Volume Right	77	0	0			
cSH	1700	1700	596			
Volume to Capacity	0.15	0.12	0.13			
Queue Length 95th (ft)	0	0	11			
Control Delay (s)	0.0	0.0	12.0			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	12.0			
Approach LOS			B			
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			21.7%	ICU Level of Service		A
Analysis Period (min)			15			

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	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↕		↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	133	0	44	133	0	44
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	149	0	49	149	0	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			149		398	149
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			149		398	149
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	94
cM capacity (veh/h)			1432		587	897
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	149	199	49			
Volume Left	0	49	0			
Volume Right	0	0	49			
cSH	1700	1432	897			
Volume to Capacity	0.09	0.03	0.06			
Queue Length 95th (ft)	0	3	4			
Control Delay (s)	0.0	2.1	9.2			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.1	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			23.1%	ICU Level of Service		A
Analysis Period (min)			15			










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

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↕		↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	215	0	82	189	0	63
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	224	0	85	197	0	66
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			224		592	224
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			224		592	224
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		100	92
cM capacity (veh/h)			1345		439	816
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	224	282	66			
Volume Left	0	85	0			
Volume Right	0	0	66			
cSH	1700	1345	816			
Volume to Capacity	0.13	0.06	0.08			
Queue Length 95th (ft)	0	5	7			
Control Delay (s)	0.0	2.8	9.8			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.8	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			32.5%	ICU Level of Service		A
Analysis Period (min)			15			












	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↕		↗
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	145	0	63	162	0	54
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	177	0	77	198	0	66
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			177		528	177
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			177		528	177
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	92
cM capacity (veh/h)			1399		483	866
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	177	274	66			
Volume Left	0	77	0			
Volume Right	0	0	66			
cSH	1700	1399	866			
Volume to Capacity	0.10	0.05	0.08			
Queue Length 95th (ft)	0	4	6			
Control Delay (s)	0.0	2.5	9.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	2.5	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			26.3%	ICU Level of Service		A
Analysis Period (min)			15			














						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	44	0	8	44	0	29
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	49	0	9	49	0	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	66	34			58	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	66	34			58	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			100	
cM capacity (veh/h)	939	1040			1546	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	49	58	33			
Volume Left	49	0	0			
Volume Right	0	49	0			
cSH	939	1700	1700			
Volume to Capacity	0.05	0.03	0.02			
Queue Length 95th (ft)	4	0	0			
Control Delay (s)	9.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)		15				












						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	82	0	43	63	0	158
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	85	0	45	66	0	165
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	242	78			110	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	242	78			110	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	100			100	
cM capacity (veh/h)	746	983			1480	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	85	110	165			
Volume Left	85	0	0			
Volume Right	0	66	0			
cSH	746	1700	1700			
Volume to Capacity	0.11	0.06	0.10			
Queue Length 95th (ft)	10	0	0			
Control Delay (s)	10.4	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	10.4	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			19.5%		ICU Level of Service	A
Analysis Period (min)			15			

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	63	0	64	54	0	63
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	77	0	78	66	0	77
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	188	111			144	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	188	111			144	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	100			100	
cM capacity (veh/h)	801	942			1439	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	77	144	77			
Volume Left	77	0	0			
Volume Right	0	66	0			
cSH	801	1700	1700			
Volume to Capacity	0.10	0.08	0.05			
Queue Length 95th (ft)	8	0	0			
Control Delay (s)	10.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	10.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		2.6				
Intersection Capacity Utilization		16.8%		ICU Level of Service		A
Analysis Period (min)		15				

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	8	72	76	33	29	17
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	10	88	93	40	35	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	261	35	56			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	261	35	56			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	92	94			
cM capacity (veh/h)	684	1037	1549			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	98	93	40	35	21	
Volume Left	10	93	0	0	0	
Volume Right	88	0	0	0	21	
cSH	987	1549	1700	1700	1700	
Volume to Capacity	0.10	0.06	0.02	0.02	0.01	
Queue Length 95th (ft)	8	5	0	0	0	
Control Delay (s)	9.0	7.5	0.0	0.0	0.0	
Lane LOS	A	A				
Approach Delay (s)	9.0	5.2		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			5.5			
Intersection Capacity Utilization			22.4%	ICU Level of Service		A
Analysis Period (min)			15			



						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	24	140	74	72	81	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	26	149	79	77	86	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	320	86	100			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	320	86	100			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	85	95			
cM capacity (veh/h)	638	973	1493			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	174	79	77	86	14	
Volume Left	26	79	0	0	0	
Volume Right	149	0	0	0	14	
cSH	903	1493	1700	1700	1700	
Volume to Capacity	0.19	0.05	0.05	0.05	0.01	
Queue Length 95th (ft)	18	4	0	0	0	
Control Delay (s)	9.9	7.5	0.0	0.0	0.0	
Lane LOS	A	A				
Approach Delay (s)	9.9	3.8		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			5.4			
Intersection Capacity Utilization			27.4%	ICU Level of Service		A
Analysis Period (min)			15			










						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	17	82	106	68	51	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	18	88	114	73	55	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	356	55	66			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	356	55	66			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	91	93			
cM capacity (veh/h)	595	1012	1536			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	106	114	73	55	11	
Volume Left	18	114	0	0	0	
Volume Right	88	0	0	0	11	
cSH	903	1536	1700	1700	1700	
Volume to Capacity	0.12	0.07	0.04	0.03	0.01	
Queue Length 95th (ft)	10	6	0	0	0	
Control Delay (s)	9.5	7.5	0.0	0.0	0.0	
Lane LOS	A	A				
Approach Delay (s)	9.5	4.6		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			5.2			
Intersection Capacity Utilization			25.2%		ICU Level of Service	A
Analysis Period (min)			15			










## **APPENDIX E**










- Project Access Analysis Worksheets

-Saturday Conditions



						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	20	72	75	29	3	2
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67
Hourly flow rate (vph)	30	107	112	43	4	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	155				301	134
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	155				301	134
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				99	100
cM capacity (veh/h)	1425				676	915
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	137	155	7			
Volume Left	30	0	4			
Volume Right	0	43	3			
cSH	1425	1700	755			
Volume to Capacity	0.02	0.09	0.01			
Queue Length 95th (ft)	2	0	1			
Control Delay (s)	1.8	0.0	9.8			
Lane LOS	A		A			
Approach Delay (s)	1.8	0.0	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization		21.6%		ICU Level of Service	A	
Analysis Period (min)		15				











						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	2	139	86	2	44	30
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	2	156	97	2	49	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	99				258	98
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	99				258	98
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				93	96
cM capacity (veh/h)	1494				729	958
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	158	99	83			
Volume Left	2	0	49			
Volume Right	0	2	34			
cSH	1494	1700	808			
Volume to Capacity	0.00	0.06	0.10			
Queue Length 95th (ft)	0	0	9			
Control Delay (s)	0.1	0.0	10.0			
Lane LOS	A		A			
Approach Delay (s)	0.1	0.0	10.0			
Approach LOS			A			
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			19.9%	ICU Level of Service		A
Analysis Period (min)			15			










						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	2	115	129	3	10	6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	2	122	137	3	11	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	140				265	139
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	140				265	139
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	99
cM capacity (veh/h)	1443				723	909
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	124	140	17			
Volume Left	2	0	11			
Volume Right	0	3	6			
cSH	1443	1700	783			
Volume to Capacity	0.00	0.08	0.02			
Queue Length 95th (ft)	0	0	2			
Control Delay (s)	0.1	0.0	9.7			
Lane LOS	A		A			
Approach Delay (s)	0.1	0.0	9.7			
Approach LOS			A			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			17.7%		ICU Level of Service	A
Analysis Period (min)			15			










-Sunday Conditions



090801-Dai Dang

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	20	102	168	29	3	2
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	22	115	189	33	3	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	221				365	205
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	221				365	205
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				99	100
cM capacity (veh/h)	1348				624	836
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	137	221	6			
Volume Left	22	0	3			
Volume Right	0	33	2			
cSH	1348	1700	695			
Volume to Capacity	0.02	0.13	0.01			
Queue Length 95th (ft)	1	0	1			
Control Delay (s)	1.4	0.0	10.2			
Lane LOS	A		B			
Approach Delay (s)	1.4	0.0	10.2			
Approach LOS			B			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			30.4%		ICU Level of Service	A
Analysis Period (min)			15			

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	2	204	210	2	44	30
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	2	232	239	2	50	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	241				476	240
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	241				476	240
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				91	96
cM capacity (veh/h)	1326				547	799
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	234	241	84			
Volume Left	2	0	50			
Volume Right	0	2	34			
cSH	1326	1700	627			
Volume to Capacity	0.00	0.14	0.13			
Queue Length 95th (ft)	0	0	12			
Control Delay (s)	0.1	0.0	11.6			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	11.6			
Approach LOS			B			
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			23.3%	ICU Level of Service		A
Analysis Period (min)			15			

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	2	150	147	3	10	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	167	163	3	11	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	167				336	165
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	167				336	165
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	99
cM capacity (veh/h)	1411				658	879
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	169	167	18			
Volume Left	2	0	11			
Volume Right	0	3	7			
cSH	1411	1700	727			
Volume to Capacity	0.00	0.10	0.02			
Queue Length 95th (ft)	0	0	2			
Control Delay (s)	0.1	0.0	10.1			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	10.1			
Approach LOS			B			
<b>Intersection Summary</b>						
Average Delay			0.6			
Intersection Capacity Utilization		19.5%		ICU Level of Service	A	
Analysis Period (min)		15				